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ABSTRACT

A study was conducted to determine whether matching of student teacher and cooperating teacher would produce improved student teacher performance and attitude. Ninety student teachers were randomly assigned to five treatment groups: a control group and four experimental groups differing in the extent to which students were matched to cooperating teachers on the basis of demographic and/or personality variables such as socioeconomic status, rural-urban background, religion, security, autonomy, innovativeness. Demographic and personality data was collected from a variety of sources including files, questionnaires, Q-sort, and interviews. Performance and attitude measures included attitude inventory pre- and posttests, student and teacher questionnaires and interviews, supervisor and cooperating teacher evaluations, and time budget analysis interviews and interaction analysis observations conducted three times at equal intervals for a sample of 10 randomly selected students from each group. Data analysis included various statistical tests for verification of controls, determination of predictor variables, and analysis of differences among the five groups. Major findings: The methods of matching used, as a composite, did not produce results superior to traditional student assignment; within-group comparisons appear to demonstrate the theoretical advantages of matching in general. Full findings and data-gathering instruments are included. [Not available in hard copy due to marginal legibility of original document.] (JS)

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FINAL REPORT

PROJECT No. 9-H-015

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Improving the Student Teaching Experience Through Selective Placement of Students

August, 1969

University of Utah, Salt Lake City

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FINAL REPORT
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IMPROVING THE STUDENT TEACHING EXPERIENCE THROUGH SELECTIVE PLACEMENT OF STUDENTS

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Salt Lake City,
Utah

August 1969

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Larry L. Leslie

SUMMARY

The aim of this study was to attempt to improve the student teaching experience. Specifically, we sought to compare the effects of the traditional method of student teacher placements to methods in which student teachers and cooperating teachers (regular school district teachers) were matched on certain characteristics.

Ninety applicants to winter quarter student teaching at the University of Utah were randomly assigned to five treatment groups, differing only in the extent to which the applicants were matched with cooperating teachers. The ninety student teachers were assigned to cooperating teachers in the five school districts in the State of Utah having approximately sixty per cent of the State's student population.

The objectives of this study were:

1. To determine whether matching of student and cooperating teacher produces improved student teaching performance.

2. To ascertain the essential elements or variables for matching.

3. To ascertain whether the student teacher who is "matched" gains a superior attitude about teaching and senses a greater gain from the experience than does the student who is assigned in the normal fashion.

The basic method used was to compare mean scores of student teacher performance or attitudes among the five groups. For example, mean scores for each group on the Minnesota Teachers Attitude Inventory collected at the termination of the experimental period were compared to discern which method of matching produced the best results.

The major findings of this study were: (1) the methods of matching invoked in this study, as a composite, did not produce superior results in terms of student teaching performance and attitude when compared to students placed in the traditional manner; (2) within group comparisons appear to demonstrate the theoretical advantages of matching in general.

INTRODUCTION

Background

The role of student teaching in the preparation of teachers is regarded as more significant today than it has been since certification of teachers became an acceptable practice. It is undoubtedly the most common element in teacher education and is usually recognized as the most important, be it called student teaching, practicum, or internship. But what are the factors of the experience which contribute to the student teacher's success?

Although many of the factors affecting student teaching are non-manipulable, some can be adjusted to meet the individual needs of student teachers. Among these would be the selection of: the school district cooperating teacher, the university supervisor, the school to which the student teacher is assigned, subject matter and grade level, and time of day if the experience is limited to a few hours. The non-human factors are relatively easy to adjust to meet student needs where selection of cooperating teachers and supervisors often are not so easily adjusted. The reason is that cooperating teachers are not responsible to the university and assignment of the latter are largely predetermined according to subject-matter specialties. Of these two human variables, research has clearly shown that the school-district-cooperating-teacher has by far the greater impact upon student teacher behavior than does that of the university supervisor. To summarize, then, the cooperating teacher is known to have the greatest(human) effect upon the student teaching experience which is the most vital component of the training program.

The major hypothesis of this research was based upon the aforementioned findings which may be stated: (1) Every known research study seeking the answer to the question, "what is the most valuable component of your teacher preparation program?" has found the answer to be, "student teaching"; (2) The most significant human factor affecting student teaching behavior has been the cooperating teacher. Logically then, from an efficiency standpoint, if one is to attempt changing student teacher behavior, the strategic element of the program upon which to concentrate is student teaching and the best individual to focus efforts on is the cooperating teacher.

Specifically, the literature reveals that it would seem critical that the selection of the cooperating teacher be based on a thorough knowledge of his characteristics and the individual needs of the student teacher. The 1963, Association for Student Teaching Yearbook, emphasizes that assignments should be made which will best relate the known needs of the student teacher to his anticipated learning potential in a given environmental setting, taking into consideration compatability of personalities and readiness of the student teacher in his particular placement.

Yet no evidence is listed in support of this assertion; apparently the reader is expected to accept this statement at face value. This explicitly points out the nature of the problem: (1) Does "matching" of student and cooperating teacher produce an atmosphere that is superior in its conduciveness to learning on the part of the student teacher? (2) What are the essential elements or variables for matching? (3) Does the student teacher who is "matched" gain a superior attitude about teaching and sense a greater gain from the experience than the student who is randomly assigned? Do observers (cooperating teachers and university supervisors) concur with these student reflections?

Bennie (1966) notes that it is significant that the most vociferous critics of education have usually spared the student teaching experience or have at least treated it kindly, and some of the more reputable educators in America have enthusiastically endorsed it. Conant (1963) credits student teaching as being "the one indisputably essential element in professional education." Indeed, amidst all the conflict over teacher education, one point on which all are agreed is that before being vested with complete control of a classroom, every teacher should have a supervised experience be it called student teaching, practice teaching, internship, or apprenticeship.

Since it is the goal of all concerned to make the student teaching experience an optimum learning situation, a variety of factors must be considered. Of all the environmental factors, logically the most crucial ones for the individual student teacher are those in the particular classroom to which he is assigned. It is the environment here that will determine, to a large extent, the degree of success or failure he experiences.

Statement of the Problem

Essentially all of the literature stresses the importance of the cooperating teacher, yet there is a noticeable lack of research to justify or negate this assumption. Typically, students are placed on a near random basis in which little or no consideration is given to the traits of either party. The purpose of this study then is to determine whether matching of certain characteristics between the student teacher and the cooperating teacher will provide a superior learning experience for the student teacher. On a more specific level, the study will also attempt to identify some of the elements or variables that contribute to successful matching.

The research is to be undertaken to provide student teachers, cooperating teachers, school district personnel, and university placement offices a more successful situation for student teacher placements.

Delimitations

The present study was limited to those senior students in secondary education who were admitted to the winter quarter (1969) student teaching program at the University of Utah.

The study was further limited in that no students in the area of home economics were used. Also, limited use was made of physical education, business skills, and music majors. The reasons for this being (1) the Home Economics and Physical Education Departments supervise their own student teachers; (2) the instruments used for data collection were not particularly suited for the above mentioned subject areas; and (3) the Home Economics Department is already attempting to match although in no systematic way.

Hypotheses

The major hypotheses, as stated in the null form, is as follows: "There are no differences in attitudes expressed nor achievement in student teaching among students who are selectively placed and those who are randomly assigned."

A further hypothesis will be that certain variables that are significant in student teacher placements can be identified.

Bennie, W.A. Cooperation for Better Student Teaching. Minneapolis: Burgess Publishing, 1966.

Conant, J.B. The Education of American Teachers. New York: McGraw-Hill, 1963.

METHODS

Description of the Participants

The sample consisted of ninety applicants to winter quarter 1969 student teaching at the University of Utah.

Cooperating teachers used for matching in the study were selected from those individuals who returned a mailed questionnaire sent to every regular classroom teacher in the Salt Lake and Granite school districts. These two districts provided an N of over 1000 secondary teachers and are the largest districts in the state in terms of student enrollments.

It should be noted that it is a general policy of these districts that only those teachers with two or more years of successful teaching experience are used as cooperating teachers. Also, it is the normal procedure for the school district personnel officers to assign student teachers to cooperating teachers. Being assigned a student teacher is often viewed by the teacher as more of a burden than an opportunity to help train future teachers.

The ninety student teacher participants were primarily assigned to cooperating teachers in the above named districts. In a few instances, where transportation and personal requests of student teachers were major factors, participants were placed in other school districts close to the University.

All of the participants were in their senior year at the University and the student teaching experience for many was the culminating phase of their preparation as future teachers.

Design of the Experiment

The ninety participants were randomly assigned to a control group and to four experimental groups by use of a table of random numbers. The random assignment to the five groups plus the fact that the participants were not informed as to which group they were in, nor under what conditions they were matched, was necessary in order to minimize the Hawthorne effect. All students were notified that they were in the study. Cooperating teachers were likewise informed, by means of a letter, of the scope of the study; but they were likewise not informed of the variables upon which they were matched.

Participants in the control group (Group I) were assigned in the normal fashion by the district office; that is, no attempt was made to match the cooperating teacher with the student teacher. Participants in Group II were assigned to cooperating teachers taken from the total pool of teachers minus those identified by the school district personnel and university supervisors as poor cooperating teachers. No attempt was made at matching this group. Group III participants were matched with cooperating teachers

taken from the same pool (no poor cooperating teachers) on such demographic variables as age, sex, socio-economic status, rural-urban background,and religion. Those participants in Group IV were also matched to teachers from the select pool; matching was on personality variables. Group V combines the matches and discriminations of Groups II, III, and IV to give as near total matching as possible. Figure I presents an overview of the basic design of the study:

FIGURE I

Treatment Group	Criteria For Matching
I (control)	Normal Placement by School District Personnel
II (X_2)	Cooperating Teachers Screened but not Matched
III (X_3)	X_2 Plus Matching on Demographic Variables
IV (X_4)	X_2 Plus Matching on Personality Variables
V (X_5)	X_2 Plus X_3 Plus X_4 (Total Matching)

There were basically two methodological problems. First was the problem of collecting personal data about cooperating teachers and student teachers and then making the assignments by matching. (These personal data became the independent variables.) Second, was the usual problem of collecting the data about the dependent variables; that is, devising methods of assessing attitudes and performance. Both problems are equally critical since the latter hinges on the former; unless we can assume accuracy within and among the independent variables, data collected on the dependent variables would be meaningless. Fundamentally we are really testing our matches which we must assume to be carefully conceived and in line with the major hypothesis which may be stated in the null form as follows:

> "There are no differences in attitudes expressed nor achievement in student teaching among students who are selectively placed and those who are randomly assigned."

A multitude of data sources were utilized to obtain demographic and psychological data about the student teachers for matching. Student files yielded psychological scores on the Minnesota Multiphasic Inventory (MMPI) and miscellaneous information from letters of recommendation. Applications to student teaching produced the usual subject matter choices, time of day available, and grade level preferences; an attached biographical sketch offered another perspective. Additional insight was gained from interviews with university instructors who were familiar with the student teacher in question. A prerequisite course, "The Teaching Assistantship", produced a view from the assistant teacher about the cooperating teacher , (who became a potential cooperating teacher for student teaching), and the assistants self-report included items on preferences for student teaching. Files, self-reports, and interviews yielded a composite of the student teacher, and his likes and dislikes in terms of teaching and the classroom climate. The most fruitful source of information came from the student teaching applicant himself. The applicant responded to two questionnaires,

to a Q-sort, and to an interview. A synthesis of information gleaned from all these sources produced what was considered to be a broad and in-depth profile of the student teacher.

Ideally it would have been desirable to have the same amount of information from the cooperating teachers, thus making it possible to match the parties by computer. The same type of data were sought; however, the logistical problems of obtaining complete information from the cooperating teachers caused serious difficulties. The data sources were limited to a mail questionnaire and interviews with experienced university supervisors, school district subject matter specialists, and selected district administrators. Hence the plan was to use the computer to select four or five cooperating teachers who seemed to be good matches. As we were not fully satisfied with this technique, each student teacher was fully described to selected individuals who were knowledgeable of cooperating teachers in the school districts. These persons then indicated who, of the four or five cooperating teachers, was the "best" match in their opinion. If first choices were unavailable for some reason the next choice was then sought.

The variables selected for matching were gleaned from the literature relevant to human relations[1] and communication theory, upon interviews with university supervisors, and upon consideration of the nature of past conflicts between student teachers and cooperating teachers that have come to the attention of the principal investigator as Director of Student Teaching.

The demographic variables for matching can be seen in Appendix A, pp. 21-23. Major emphasis was placed on age, sex, socio-economic status, religious preference, and rural-urban background. Personality variables, which could perhaps be more accurately labeled, "preferences in classroom situations" were developed from the student teacher Q-sort and from a mail questionnaire obtained from the cooperating teachers. (See Appendix A, pp. and Appendix B, Table .) Variables obtained from a factor analysis of the Q-sort were: sense of security, autonomy, innovativeness, and progressivism. It was the attempts to match by computer on these traits that caused considerable frustration and which led to interviews for aid in matching.

Over a period of time it would be possible to build up files on all cooperating teachers thus completely allowing matching on a basis analogous to computer dating. In this study, there were insufficient resources in time and personnel to collect all necessary information for complete computer matching.

Data collection on the dependent variables is the critical task of most research studies. How does one test the hypothesis that,

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[1]For a discussion of the theory for selection of variables, see Chapters 1-3 of Classroom Grouping for Teachability, Herbert A. Thelens, Wiley, 1967; Characteristics of Teachers, David G. Ryans, American Council on Education, 1967; and Handbook of Social Psychology I, Gardner Lindsay (editor), Addison-Wesley, 1954.

if matched, student teachers will have a superior attitude toward and perform better in student teaching? And, how can we determine what the key personal variables are for matching? The latter question necessarily calls for a more complex design.

Instruments used to investigate questions in the affective domain were the Minnesota Teachers Attitude Inventory (MTAI), time budget analysis, a Q-sort, interviews with the cooperating teacher and student teacher, and questionnaires from the same two parties plus one from the university supervisor. Cognitive instruments were: Flanders' technique of interaction analysis and rating schemes solicited from the university supervisor and the cooperating teacher. See Appendix A for illustration of these instruments.

Pretesting of all particpants with the Minnesota Teachers Attitude Inventory (MTAI) took place during the orientation on the first day of the quarter. Investigations indicate that the attitudes of teachers toward children and school work can be measured with high reliability, and that they are significantly correlated with the teacher-pupil relations found in the teachers' classrooms. The MTAI is by far the most popular instrument used for the measurement of such attitudes. It is designed to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships, and indirectly how well satisfied he will be with teaching as a vocation. Post-testing, using the MTAI, occurred during the final week of the quarter, as was student and teacher evaluations of the experience (questionnaires and interview).

During the quarter two basic techniques were implemented. One, the student teacher-cooperating teacher relationship was assessed using time budget analysis--a research technique in which the interviewee chronologically relates with great care the events of a recent time period. In this study, the student teachers were interviewed asking them to carefully describe in detail their experiences in the school on the previous day. (See Appendix A for interview guide.) The purpose of time budget analysis is to record the interplay of thought and emotion between the student teacher and the cooperating teacher, especially the student's attitude toward the guidance offered by the regular teacher. The primary focus was on the time spent with the student teacher by the cooperating teacher. Communication theory states that frequency of communication is directly related to common understandings. Hence, the more communication, the better should be the attitude of the student teacher toward his experience. Each participant was interviewed three times at equal intervals during the quarter and total amount of interaction time was recorded. All interviews were conducted by the same person for reliability purposes.

The second such technique was interaction analysis which was used to record quantitative and qualitative dimensions of teacher verbal behavior in the classroom. This technique, which was developed by Ned A. Flanders, is an observation procedure designed to permit a systematic record of spontaneous acts, and is one of the most sophisticated techniques developed to record classroom climate.

Using the system of ten categories (Appendix A) the observer, at the end of each three-second interval, decides which category best represents the "communication behavior" during that three seconds and makes the appropriate tally on the observation sheet (Appendix A). Interaction analysis was used in the study under the hypothesis that the more compatible the student teacher-cooperating teacher relationship, the more noticeable the social-emotional climate and its effect on human behavior would be. Participants were observed three times, at approximately equal intervals, during the quarter and tallies were grouped under three major categories: teacher indirect verbal communication, teacher direct verbal communication, and student talk. Observations were approximately fifteen minutes in duration and total number of tally marks were adjusted to a base of 300 (20 observations per minute for 15 minutes) for ease of handling. All observations were conducted by the same two trained researchers.

Due to the amount of time necessary to conduct the time budget analysis interviews and the interaction analysis observations, and due to the limited availability of qualified observers, a limited number of participants in each of the five groups were randomly selected on whom the two techniques mentioned above were implemented. Statistical "power" calculations indicated that a sample size of ten (N=10) per group would be adequate for these analyses.

During the last week of the quarter, data was collected by questionnaire and interview of both student teachers and cooperating teachers. Post-testing on the MTAI was also carried out.

The last data gathered were from supervisor and cooperating teacher evaluations of the student teacher's performance for the quarter (see Appendix A). Both parties rated the student by forced comparison to previous student teachers with whom they had worked.

Generally the study investigated the opinions of both parties toward the experience of the quarter. This required discerning how each person viewed the other in regard to fulfillment of role expectations and to seek the student teacher's assessment of how well the experience satisfied his needs.

FINDINGS AND ANALYSES

This section presents an analysis of the data collected and consists of (1) verification of controls, (2) determination of the best predictor variables for successful matching as measured by performance and attitudes, and (3) analyses of differences among the five groups.

Verification of Controls

Verification of the controls was necessary in order to show that effects were attributable to the treatment. Although student teachers were assigned randomly to each of the five groups, there was some reason to suspect that cooperating teacher typologies were not equally distributed across the five groups since they were drawn on a clearly, non-random basis; that is, they were matched to the randomly drawn student teachers. Further, the control group cooperating teachers were selected by the school districts in normal fashion only after the total pool had been diminished by withdrawal of those teachers who were matched. (Theoretically, since the pool of cooperating teachers was well over 1000, the selection of these teachers can be assumed to be sampled with replacement).

Hence, a check was made by Chi-square analysis and ANOVA to determine if, in fact, cooperating teachers were distributed evenly across the five treatment groups according to demographic and classroom characteristics. Data for these checks were drawn from a questionnaire containing demographic questions and items reflecting the cooperating teachers perception of her classroom environment. Since neither Chi-square nor F values were significant, it was assumed that cooperating teacher typologies were not unevenly spread. Tables are not presented in relation to these checks as they are purely mechanical. They would contribute very little, being not directly related to the hypotheses under study.

Determination of Predictor Variables

Although between group comparisons via analysis of variance promised to detect the best general form of matching, such analyses would not specify which particular variables were the best specific criteria for matching. Hence, in order to locate the best predictors of good matches, a multiple regression analysis was conducted.

There were twenty-two independent variables (see Table 1 for a listing) from which to select the best predictors and there were twenty-three dependent variables (see Table 1 for a listing), each to be taken singly against all of the independent variables. That is, all independent variables were considered together against each dependent variable in order to discern which were the best predictors of each student teacher score. The twenty-two independent variables consisted of ten demographic variables, five each from the student teacher and cooperating teacher; four factor scores from the pre-Q-sort; pre-test scores on the Minnesota Teachers Attitude Inventory; and seven factors from a cooperating teacher's questionnaire. (For a detailed discussion of the demographic variables, the factor analyses, and of each factor, see Apprendix B.)

In summary, since matching was conducted in consideration of all twenty-three independent variables, we would like to know which of these tended to produce the best matches in terms of the various measurements of student teacher performance and attitudes.

Table 1 summarizes the results of all the multiple regression analyses. The column numbers represent the ranking of each independent variable in terms of the proportion of its contribution to the total variance. For example, by following down the column headed MTAI (post) which is the first column under the dependent variable , the independent variables contributing the most variance is the MTAI (pre), as would be expected, and is therefore numbered 1; the second best predictor is Factor 5 of the cooperating teacher mail questionnaire and is numbered 2. By referring below to the explanation of the symbols, Factor 5 can be identified as referring to the egalitarian bent of the cooperating teacher. By referring to Appendix B, the full explanation of this factor can be found.

Table 1 summarizes from the most important twenty-three dependent variables and the best independent variable predictors. Although the variance is not large, certain patterns do emerge. The best predictors would appear to be student teacher and cooperating teacher demographic variables (according to frequency of prediction [see second from far right column]) although isolated factors from the cooperating teacher's questionnaires and the Q-sort have higher frequency counts. The highest counts in the cooperating teacher questionnaire and is for Factor 2, the Reluctant Factor, which identifies the cooperating teacher attitude about student teachers who fail to grasp the importance of student teaching and desire to watch rather than get involved. Apparently, the interpretation should be that cooperating teachers often feel very strong about this type of student teacher attitude and if they sense such an attitude, they act in such a way that the student teacher gains little. The converse would also be true. The second highest frequency is observed for the Q-sort, Factor 4, the Progressive Factor, which identifies student teachers having a progressive orientation towards education.

The far right column lists the frequency that each independent variable predicted significantly the most vital instruments, as designated by the investigator. The MTAI post test was so designated because of its wide use. The interaction analysis variables were included because they give the only direct assessments of performance. The first factor of each questionnaire was designated as critical because they are ratings of performance. One can see that the MTAI pretest was mentioned four times, as was the Egalitarian Factor (Factor 5) of the cooperating teacher's questionnaire and the socio-economic status of the cooperating teacher.

To help in interpreting the symbols used in this section of the analysis, the following descriptions are presented:

S.T. - Student Teacher
C.T. - Cooperating Teacher
C.T. Mail - Cooperating teacher mail questionnaire (a description of the factors are given in Appendix B.)

TABLE 1

A SUMMARY TABLE OF THE RESULTS

DEPENDENT

INDEPENDENT VARIABLES		MTAI (POST)*	1ST TBA TIME	1ST TBA C.T. PRESENT	1ST TBA #CLASSES TAUGHT	3RD TBA TIME	3RD TBA C.T. PRESENT	3RD TBA #CLASSES TAUGHT	3RD TBA RATING OF EXP.	3RD TBA RATING OF C.T.	3RD I.A. DIRECT	3RD I.A. INDIRECT*	3RD I.A. STUDENT TALK*
S.T. DEMO	SEX 1	3	4	11					11	1		5	2
	AGE 2	7		5	8		8		3	4			
	R/U 3	6	7	2	9				10		9		
	SES 4		.5			4	3		4		2	2	
	REL 5				6	1					5		
MTAI PRE		1			1	7			2				8
C.T. MAIL	1		1	4			1		5		1	1	
	2	4	3	3		11	10	4	6	3	3	4	
	3		10					1			4		
	4			9		5	11	5	13	8			6
	5	2			7				9			8	5
	6		8	8						10			7
	7		9	7	3		2	3					
Q-SORT (PRE)	1			10		3	6						
	2								7	7			
	3					8			12				
	4	5			2		7	2	1	6			
C.T. DEMO	SEX 1					2	4	8	8		6	7	
	AGE 2			6		6			14		7		4
	R/U 3		1	1	4	9		7		2			
	SES 4		6			10	9	6			8	6	3
	REL 5		2		5		5	9		9		3	1
MULTIPLE R FOR VAR.		.8086	.6063	.7748	.6750	.7249	.5473	.5783	.7061	.6180	.5594	.5344	.5768
MULTIPLE R FOR ALL VAR.		.8337	.6940	.8142	.7134	.7579	.6129	.6394	.7217	.6912	.5918	.5875	.6110

OF THE MULTIPLE REGRESSION ANALYSIS

VARIABLES

TABLE 1 (Cont.)

C.T. QUEST*		S.T. QUEST*			SUPV. QUEST*		POST Q-SORT				TOTAL TIMES LISTED AS AN IMPORTANT PREDICTOR	TOTAL TIMES AS PREDICTOR ON CRITICAL INSTRUMENTS
1	2	1	2	3	1	2	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4		
			1	2						5	10	3
3	4						3	2	2		11	2
					9		7	8		6	10	2
11					5	4	8	7		10	12	3
10				4	2	2				11	8	2
1	1	5	4	6							11	4
							9	3			8	1
4							6	6	7		14	3
7					3	3					6	2
		3							5	2	10	2
					7				11		7	4
			3		8					12	7	2
					4		4		3	3	9	1
					1						4	1
6	5	2					5	1		4	8	2
5				3			1	4	1	1	8	1
2	3	4	5	5		6			4		13	3
		1	2					9	6	7	11	2
8	6					5				9	9	2
	2					7	4		8		9	0
9	7			1	6				9		12	4
						1		5	10	8	11	2
.5971	.4110	.3937	.3268	.5227	.4569	.4159	.7180	.8698	.8401	.8778		
.6270	.4491	.4651	.4057	.5618	.5014	.4953	.7670	.9023	.8601	.8895		

*The critical dependent variables

Factor 1 - Friendly
Factor 2 - Reluctant
Factor 3 - Assured, Independent
Factor 4 - Innovative, Confident
Factor 5 - Egalitarian
Factor 6 - Traditional
Factor 7 - Self-conscious, subject centered

Rel. - Religious preference
SES - Socio-economic status
Rural/urban - This denotes whether the individual grew up in a rural or urban setting.
MTAI - Minnesota Teachers Attitude Inventory
Q-sort
Factor 1 - Insecure, Dependent
Factor 2 - Autonomous
Factor 3 - Innovative, Anti-subject Matter
Factor 4 - Progressive
(A more in-depth description of these factors is given as they are discussed in Appendix B.)

The Main Analysis

The main analysis of the study utilized a two-way analysis of variance, which was used to determine which kind of matching was best in terms of each of the dependent variables. In addition to checking which of the matches were best by examining differences among the five groups, it was also deemed important to analyze within group differences, thus necessitating the two-way rather than one-way design. The categorization within groups is discussed below and briefly stated involves separating each group of student teachers into those who assessed their cooperating teacher above the median of each Group (I-V) and those who assessed their cooperating teacher below the group median. The rationale for investigating differences within groups is to neutralize the effects of our particular skill or lack of it in matching. In other words, by comparisons within groups it is possible to first ask participants to evaluate how well they were matched and then to reduce or eliminate the effects of poor matching brought on by the fallibility of the investigator.

For purposes of review, the five treatment groups consisted of:
Group I - Normal assignment by the school district.
Group II - "Poor" cooperating teachers screened out, but no other attempt at matching.
Group III - Matching from the same pool as Group II, but in consideration of those demographic variables deemed important.
Group IV - Matching from the same pool as Group II, but in consideration of those psychological characteristics deemed important.
Group V - Matching on characteristics of III and IV for "total" matching, from the pool of Group II.

The complete procedure for performing the analyses is demonstrated in its entirety on the first dependent variable, the MTAI post test,

by the student teacher, more student talk, and less direct influence in classes conducted by demographically-matched students in terms of raw scores. At the same time, matching on personality variables was not fruitful; in fact, such matching led to more direct influence on the part of student teachers. The behavior of Group IV student teachers continued to be perplexing. During trials two and three, those students in Group IV who had assessed their cooperating teachers as above the median at the beginning of the quarter, demonstrated the least desirable behavior. They tended to show more direct influence, less indirect influence, and less student talk in their classes. Again, very few significant F values were reached.

General

As noted previously, there were no comparisons between the control group and each method of matching taken singly, the reason being that the statistical procedures adopted did not allow these analyses. The factorial analysis was based upon a set of planned comparisons and the basic planned comparison was to contrast matching versus no matching. Hence, once this planned comparison was established, only comparisons orthogonal to the original set were allowable. Therefore, only speculations regarding the comparison of the control group versus the demographically matched group are defensible.

The pattern favoring matching was evidenced by visual examination of the mean scores on the interaction analysis, the Minnesota Teacher's Attitude Inventory, the assessment of the experience by the student teachers, and the assessment of the experience and performance of the student teacher by the university supervisor (although only the supervisor's assessments were significantly different). The only deviations from this pattern were the assessments of the student teachers' performance by the school district cooperating teacher with one such difference being significant.

Again, it must be understood that the statistical procedures adopted did not justify the comparison of the control to the demographically matched group although a priori decisions could have been so made. At the least, matching appears to be a promising technique and is certainly worthy of future research investigations.

and can be found in Appendix C. All tables relating to the following paragraphs can be found in Appendix C.

Major Findings

Simply comparing the control group with the composite four groups who were matched, reveals very little information. It would appear that the matching that was carried out in this study, compositely, was not superior to making placements in the normal fashion. In other words, we must fail to reject the null hypothesis that: "There are no differences in attitudes expressed nor achievement in student teaching among students who are selectively placed and those who are randomly assigned." This is not to say that the matching in any one group taken singly was inferior, or for that matter not superior to, the control group.

The Three Questionnaires

The over-riding, consistent finding from the three questionnaires was that in almost every case, mean scores appeared to favor those student teachers who had assessed their cooperating teacher above the median within their group at the beginning of the quarter. There were only two deviations from this within the three questionnaires in which cases the findings were not contrary but were mixed, the two deviant cases being assessments made by the university supervisors. Between group comparisons showed two significant F values. Neither of these had an important bearing on the hypothesis. (See Appendix C, Tables 10-16, for the data supporting these generalizations. Factor analyses of the three questionnaires are found in Appendix B, Tables 4-6.)

The Time Budget Analyses

Time budget analyses results confirmed the major trends. (See Tables 17-27 of Appendix C.) First it was again those students who had assessed their cooperating teachers as above the median who: appeared to spend more time with their cooperating teachers, find their cooperating teachers present more often when they were teaching, think they had gained more from their experience, and consistently evaluate their cooperating teachers higher. Again the trend was clear, but in this case, there were more numerous significant F values. It was within the control group and the group matched demographically that students having the highest ranked cooperating teachers showed the most favorable mean scores. Between group comparisons, when considered in light of the previous sentence, indicate the importance of demographic matching. That is, during the third trials where matching on demographic variables do not appear productive on between group comparisons, within group comparisons showed this not to be the case.

The Interaction Analyses

The interaction analyses findings were consistent with the major findings. (See Tables 28-30 in Appendix C.) In most case, demographic matching appeared better upon visual examination of mean scores. This means that there was more indirect influence

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Between Group Comparisons

The major consideration of this study and the most important conclusion to be drawn from the results, would be the basic comparison of matching versus not matching. The results showed very few significant differences and the results were mixed. In favor of the control group, cooperating teachers assessed the performance of this group to be superior to the combination of all groups utilizing matching in some form. There was, however, no comparison between the control group and each of the matched groups taken singly. In favor of matching, it could be noted that early in the quarter student teachers in the control articulated a weaker desire to teach. Also, it was noted that the cooperating teacher was present in the classroom of Groups III and IV student teachers more often than in the other four groups. This finding could be interpreted to mean that the cooperating teacher felt a greater need to be present to support the student teacher although the overall cooperating teacher assessment of superior performance by these control group students would not so indicate. The general conclusion then would be that in terms of the way in which matching was conducted in this study, matching does not appear to produce superior results over not matching. At the same time, this conclusion can not be inferred to mean that no type of matching, taken singly, would fail to produce superior results in terms of student teacher performance and attitudes.

Within Group Comparisons

In fact, within group comparisons clearly suggest that student teacher-cooperating teacher compatibility does lead to superior performance and attitudes on the part of student teachers. The basis of this statement is in the most consistent pattern demonstrated by the data of this study. The ever-present findings were that student teachers, who had at the outset classified their cooperating teachers above the median, performed better on nearly all variables, but that differences in mean scores were not usually large enough to produce significant F values. (Of eleven within group significant F scores, nine were in the direction favoring the theory.) They were assessed as superior by the cooperating teachers and university supervisors, and themselves rated their experiences higher. Nearly all significant F values verified this pattern which could be noted by a cursoy view of the mean scores in approximately ninety per cent of the cases. In other words, the basic hypothesis that people who are compatible work well together was clearly demonstrated by this procedure, which involved a student teacher assessment of their cooperating teacher after they had been exposed to that teacher for approximately two weeks. This rating serves as prima facia evidence of good matches. Without this procedure, there could only be an appraisal of the researchers ability to make matches and not an appraisal of the theoretical question of the effects of compatibility.

Having failed to reject the general null hypothesis, it nevertheless appears productive to proceed to examine the matchings which appear superior to other matches. That is, since matching theoretically appears advantageous (the within group comparisons support this), what are the best variables for matching? We can conclude that the investigations of this study revealed one promising basis for matching--matching on demographic variables. The best indication of the validity of this conclusion can be found in the cooperating teachers' assessments of student teacher performance and in student teacher performance on interaction analyses. Similary, those student teachers matched on personality variables consistently performed in an inferior manner when compared to students who were matched on demographic variables or who were not matched at all. Finally, and most convincingly, there were numerous significant F values showing superior performance by those students who had evaluated their cooperating teachers above the median early in the quarter. The fact of the superior performance of the "best, demographically matched" student teachers leads to a conclusion in favor of demographic matching. On the other hand, matching on psychological bases, <u>in the manner performed in this study</u>, is not promising.

In summary, it may be concluded that: (1) matching as carried out in this study did not, <u>as a composite</u>, warrant the efforts required for matching; (2) theoretically, matching remains as a promising aid to superior student teacher performance and attitudes although the overall potency of the student teaching experience itself tends to dilute the effects which any one person may have; and (3) if matching is <u>assumed</u> to be a worthwhile endeavor, matching on a few, simple demographic variables appears at this point to be the only warranted procedure as attested to by the formulation of best predictor variables.

There are, of course, many possible explanations for the few significant findings. On the basis of the trends of the within group comparisons, one might assume that matching can be productive if the right variables for matching can be identified and if the practical problems encountered in making the matches can be overcome.

The possibility cannot be discounted, however, that matching is not <u>potent</u> enough to cause sizeable changes in attitudes or behavior, thus the small differences in mean scores. This impotency must be discussed in the full context of the impact of student teaching upon the student teacher. Student teaching is an extremely traumatic experience for the newcomer. It is the culmination of at least four years of education and preparation to be a teacher. The student teacher all at once finds herself on "center stage," in front of thirty to forty expectant pupils. She has no escape; it is either produce, or acknowledge the wasting of four years--at least, so it seems to her. Apparently the cooperating teacher simply cannot compete against these circumstances--the forces are too strong.

Another possible answer may lie within the student teacher herself. Interviews with student teachers revealed an effort on their part to compensate for ineffectual cooperating teachers.

Perhaps by trying harder in order to make up for the cooperating teacher's behavior, the student teacher learns more. Or, perhaps we were witness to the related phenomenon of cognitive dissonance--learning by reaction against cooperating teacher behavior.

Recommendations

In view of the findings of this study, matching cannot be recommended at this time. The efforts necessary are not insignificant especially in light of the effects. It may even be that it is advantageous to assign student teachers to cooperating teachers who are their near opposites; i.e., in light of the cognitive dissonance theory.

It is recommended that future research focus on a comparison of matching on demographic characteristics versus regular student teacher placement. This research would be easily conducted since the more complex solutions have been eliminated by the findings of this study or at least been found to be somewhat unmanageable in the light of our existing knowledge of personality research.

APPENDIX A

DATA GATHERING INSTRUMENTS

COOPERATING TEACHER BIOGRAPHICAL DATA

1-3 Name _____
Last First Middle

(Circle the Appropriate Number)

5. 1. M 2. F

7. Age: 1. 18-22 2. 23-27 3. 28-35 4. 36-45 5. over 45

9. Ethnic group _____

11. Area grew up in: 1. City 2. Suburban 3. Rural

13. Father's occupation: _____

15. Estimate your family's socio-economic status: 1. Upper-upper or middle-upper 2. Lower-upper or upper-middle 3. Middle-middle 4. Lower-middle or upper-lower 5. Middle-lower or lower-lower

17. Generally in what area do you teach?
01. Davis County 02. Near University 03. Salt Lake City North 04. Salt Lake City Central 05. Salt Lake City South 06. Salt Lake City West 07. Granite North 08. Granite East 09. Granite West 10. Granite South 11. Murray 12. Jordan

20. Religious Preference: 1. Catholic 2. Greek Orthodox 3. Jewish 4. L.D.S. 5. Protestant 6. Other, specify _____

22. Do you have any physical disability other than wearing glasses? 1. Yes, specify _____
2. No

24. Height: 1. Short 2. Medium 3. Tall

26. Weight: 1. Less than 100 lbs. 2. 100-130 3. 131-150 4. 151-175 5. 176-200 6. 201-225 7. 225-240 8. over 240

27. What worries you most about working with Student Teachers?

28. In one phrase give the characteristics you would most like to find in your student teacher.

Our student teachers vary markedly on several characteristics. In order to promote a mutually enjoyable quarter for both of you, we would like to place you with a student teacher who is compatible with you. Therefore, would you respond to these few items in the following way: We are stating the preference of students. Please react by indicating how suitable the described student would be to you and your classroom.

	Suitable	Unsuitable
45. A student who needs a well disciplined and ordered classroom (versus one who can tolerate some noise and some disorder).		
46. A student who is well-grounded in and emphasizes the subject matter over personal development of students (although he is of course <u>concerned</u> about the latter).		
47. A student who believes that the public Schools are presently and have been far too traditional in their approach (versus one who thinks that the schools are generally doing an excellent job).		
48. A student who prefers that the cooperating teacher leave the room when he begins teaching and that she <u>generally</u> remain away after that.		
49. A student who welcomes constructive criticism of his teaching (versus one who would primarily prefer only reinforcement).		
50. A student who wishes to observe for several weeks (versus one who is anxious to assume early responsibility for the class).		
51. A student to whom it is important to be able to use his own teaching techniques (versus one who is more than willing to assume the cooperating teacher's methods).		

	Suitable	Unsuitable
52. A student with great confidence (versus one who is in obvious need of support).		
53. A student who prefers a very warm and friendly cooperating teacher (versus one who prefers a more reserved person).		
54. A student who desires complete autonomy in the assignment of grades.		
55. A student who expects to be treated as a professional equal by the cooperating teacher.		
56. A student who hopes that his cooperating teacher will not be a stickler for such things as punctuality and will allow him to be absent when he must study or work.		
57. A student who feels that text books should provide the major focus of the class.		
58. A student who feels that students should play a major role in determining what will be taught and how.		
59. A student who feels that although teaching is more than just a job, we should be annoyed when people say that we should worry more about service to children than about such unprofessional issues as salaries and pay for extra-curricular assignments		

INTERVIEW SCHEDULE, Q-SORT INSTRUCTIONS AND ITEMS

Interview Schedule

Part I

INTRODUCTION

It is extremely important that you understand our purposes in asking you some questions. Our only desire is to provide you with the best possible student teaching experience. In fact, we are doing a study to see if we can do exactly that. Therefore, it becomes very important that you be extremely honest with us, not only because it will serve your best interest but ours also. Let me give you an example of what we mean by honest. We might ask you if you prefer working in the democratic classroom, to which you would probably reply absolutely yes. Yet the truth of the matter is, many people would prefer working in a more ordered or regularized classroom. Now if you told us that you preferred the democratic classroom, that is exactly what we would try to get for you. Yet this could very well cause you considerable grief should discipline problems arise. Another example would be that you might very well quote the text books and say you would rather teach the child than the subject matter. Yet again the truth of the matter is that

for many teachers the subject matter is more important and teaching the child is very difficult. Be honest in answering our questions or you will likely find yourself in a student teaching situation that isn't at all what you wanted. Finally, you have our word that your reactions will never go into any personal files of yours nor will your reactions be transmitted to anyone not directly concerned with this study. In other words, we give you our assurance that nothing you say will ever work against you but quite the contrary, will work only in your favor.

Part II

QUESTIONS

1. Go through the demographic variables.
2. What are your anxieties about student teaching?
3. You have available to you every cooperating teacher in the Salt Lake Area, now if you can identify by name or if not, by description, exactly and precisely your choice of cooperating teachers then we will do our best to get you exactly that person or kind of person. So tell us what you really look for in a cooperating teacher.
4. Validate each of the general Q-sort impressions.

INSTRUCTIONS FOR COMPLETING THE CARD SORT

Enclosed is a packet of 35 cards, each containing a statement with which you may or may not agree with. Also enclosed are five papers, labeled as follows:

#5 - I strongly agree with these statements.
#4 - I agree with these statements.
#3 - I feel neutral about these statements.
#2 - I disagree with these statements.
#1 - I strongly disagree with these statements.

You are asked to select seven statements for each category.

To accomplish the final result of your sorting, proceed as follows:

1. Go through all of the cards, arranging them first in three piles: one for statements with which you agree, another for those about which you feel neutral, and a third for those with which you disagree. You may put any number of cards in each of the three piles in this first sorting, but you will find that subsequent sorting goes more efficiently if you put roughly 14 in the first, seven in the second, and 14 in the third.

2. From the first pile, select the seven cards with which you strongly agree and place them on top of paper #5.

3. Next, select the seven cards with which you agree and place them on paper #4.

4. Now it is best to start at the other end. From the third of the original three piles, select the seven cards with which you strongly disagree and place them on paper #1.

5. Next, select the seven cards with which you disagree and place them on paper #2.

6. Go through each pile a final time, changing cards from pile to pile if you like, but making sure that, when you have finished each pile has the same number of cards in it (which should be seven).

IMPORTANT: You may find it difficult to force the same number of cards into each pile and have the feeling, when you are finished, that some of the cards are mismatched with the labels on the piles into which you have put them. Nevertheless, it is essential to our treatment of the data that you

follow these instructions exactly, despite the reluctance you may feel.

Happy sorting! When you have completed the card sort, please paper clip the piles together (paper clips enclosed) and return it to Dr. Leslie.

Q-SORT ITEMS

1. I would prefer working with a cooperating teacher who de-emphasizes classroom discipline and order.

2. The major objective of teaching in my subject area is to transmit the knowledge that composes the discipline.

3. I would like to be allowed complete autonomy in the assignment of student grades.

4. I would prefer being placed for student teaching in a classroom situation in which textbooks provide the major focus for the work of the class.

5. I would prefer that my cooperating teacher leave the room when I begin student teaching and generally remain away after that.

6. A high noise level is disturbing to me.

7. Teachers should emphasize subject matter over the personal development of students because in the long run it is the knowledge of the subject matter that pays off.

8. It is important to me to be placed with a cooperating teacher who is understanding and supportive.

9. I believe that the public schools are presently and have been far too traditional and rigid in their approach.

10. I worry about visits from the University supervisor.

11. Noise does not bother me much if it contributes to the objectives of the class.

12. The knowledge I possess in my subject area would satisfy the most knowledgeable of cooperating teachers.

13. I have little doubt about my ability to become an effective student teacher.

14. As a teacher I would like to try as many new and different ideas as I can.

15. I am anxious about my upcoming student teaching experience.

16. Generally the movement of students around the classroom for miscellaneous reasons should be curbed.

17. I would prefer working with a cooperating teacher who emphasizes the subject matter in his classroom.

18. I welcome constructive criticism; in fact, I hope that my cooperating teacher will be frank in his analysis of my teaching.

19. Students ought to play a major part in deciding what will be taught in the classroom and how it will be taught.

20. I see student teaching as just another course, except that it carries 12 units; and, I am really not especially concerned about it.

21. Maintaining classroom discipline is a major concern of mine.

22. I am anxious to accept responsibility for the major portion of the class and hope that my cooperating teacher will not be reluctant to relinquish it.

23. I am confident that I will be able to communicate effectively with students of the age that I will be teaching.

24. I would highly value a warm and friendly cooperating teacher.

25. I am willing to conform to the established policies of dress and personal appearance that are required by the school.

26. I would prefer that the classroom in which I student teach has an established set of rules and regulations.

27. I would prefer observing as long as I can before assuming the full burden of teaching.

28. Generally I have been very successful in most things that I have attempted throughout my life.

29. I expect to be treated as a professional equal by my cooperating teacher.

30. I hope that my cooperating teacher will not be a stickler for such things as punctuality and will allow me to be absent when I must study or work.

31. I would prefer working with a teacher who will allow me to begin teaching without first observing her teaching for several weeks.

32. It is important to me to have the opportunity to use my own teaching teachniques rather than be expected to assume the style and methods of the cooperating teacher.

33. The physical arrangement of the classroom and student seating should vary with the nature of the tasks undertaken in the classroom.

34. A shy or reserved cooperating teacher would make my student teaching a less pleasant experience.

35. Although teaching is more than just a job, people annoy me when they say that we should worry more about our service to the children than about such mundane issues as salaries and non-paid, extra-curricular assignments.

INTERACTION ANALYSIS CATEGORIES AND MATRIX

Section I

CATEGORIES FOR INTERACTION ANALYSIS

TEACHER TALK	INDIRECT INFLUENCE	1.* ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a nonthreatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included. 2.* PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying, "um hum?" or "go on" are included. 3.* ACCEPTS OR USES IDEAS OF SUTDENT: clarifying, building, or developing ideas suggested by a student. As a teacher brings more of his own ideas into play, shift to category five. 4.* ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.
	DIRECT INFLUENCE	5.* LECTURING: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions. 6.* GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply. 7.* CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK		8.* STUDENT TALK-RESPONSE: a student makes a predictable response to teacher. Teacher initiates the contact or solicits student statement and sets limit to what the student says.

STUDENT TALK		9.* STUDENT TALK-INITIATION: talk by students which they initiate. Unpredictable statements in response to teacher. Shift from 8 to 9 as student introduces own ideas.
		10.* SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

There is NO scale implied by these numbers. Each number is classificatory, it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

Name _____ Trial

Activity _____ 1 2 3

Category	1	2	3	4	5	6	7	8	9	10	Total
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
Total											

TIME BUDGET ANALYSIS GUIDE

Name_____ Trial 1 2 3

1. Introduction: I am going to ask you to describe the events that occurred while you were in the school yesterday. I realize that you may be somewhat at a loss as to what I am looking for but this is desirable in order that I get a true picture of what took place. Therefore, please begin to relate what occurred indicating approximately how long each event took. We will adjust for the amount of detail which you should relate as we proceed--so how did the day begin?

2. Was your cooperating teacher present?

3. What portion of the two hours do you teach?

4. Indicate on this scale how you would rate your experience in this school IN COMPARISON TO WHAT YOU KNOW OR ASSUME ABOUT THE EXPERIENCES OF OTHER STUDENT TEACHERS.

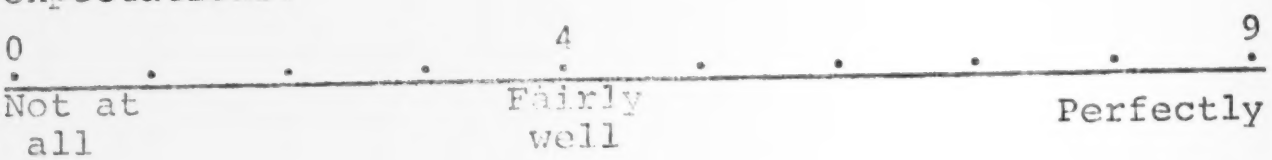
1	2	3	4	5	6	7	8	9
The very worst				Average				The very best

5. Indicate on this scale how you would rate your relationship with your cooperating teacher IN COMPARISON TO WHAT YOU KNOW OR ASSUME TO BE THE RELATIONSHIP OF OTHER STUDENT TEACHERS WITH THEIR COOPERATING TEACHERS.

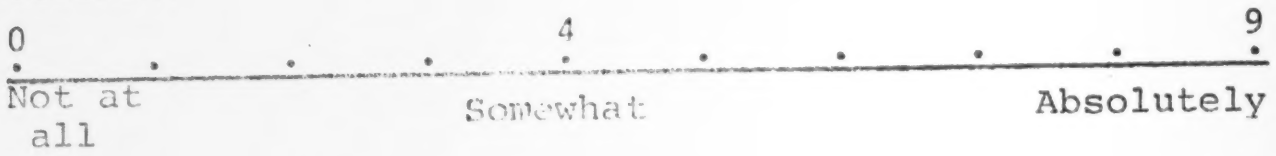
1	2	3	4	5	6	7	8	9
The very worst				Average				The very best

COOPERATING TEACHER QUESTIONNAIRE

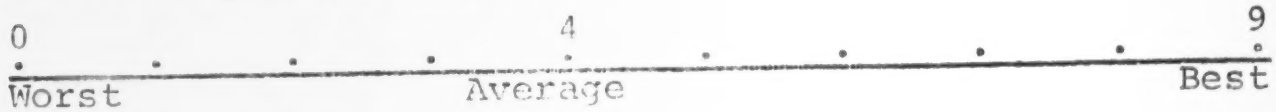
1. How well did the Student Teaching experience meet your expectations?



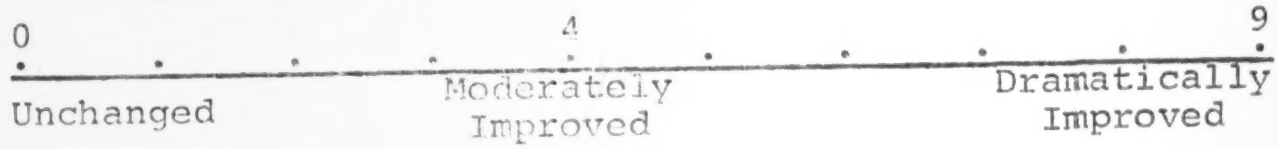
2. Did you enjoy working with this particular student teacher?



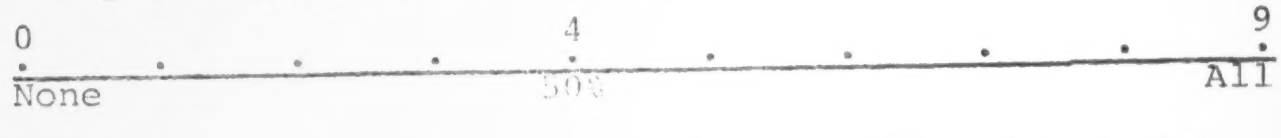
3. Relative to other experiences with student teachers how did this quarter compare?



4. How did your student teacher's performance change since the beginning of the quarter?



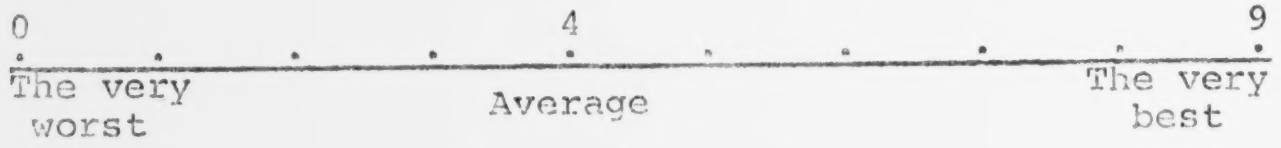
5. If any change, how much of it do you attribute to you and your suggestions? (Please be frank)



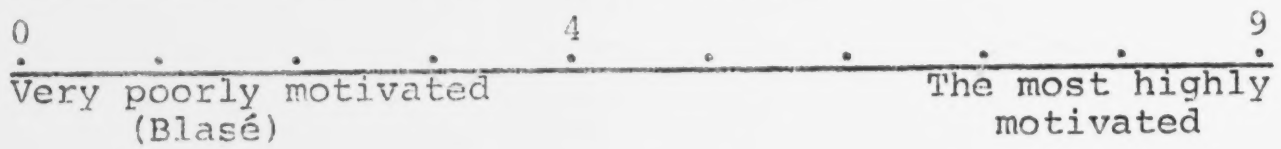
6. What alterations, if any, would you have made in the student teacher's attitude or behavior?

7. Would you want to work with a similar student teacher again?
With what reservation?

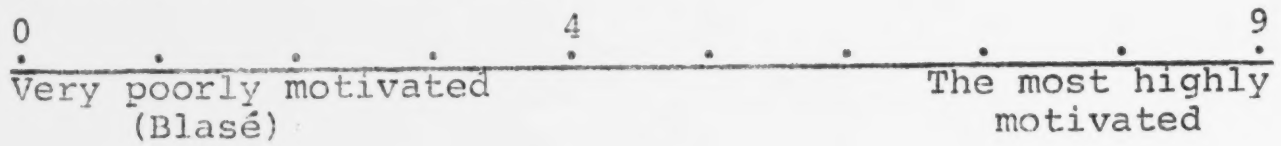
8. Rate your student teacher in comparison to others you may have had and to others you have known about.



9. Assess the student teacher's desire to teach.



10. Assess the student teacher's desire to teach at the beginning of the quarter.



STUDENT TEACHER QUESTIONNAIRE AND INTERVIEW GUIDE

(Note: These instruments will undoubtedly undergo modifications as the time for their use approaches and as we discover questions which remain unanswered by our ongoing instruments. However, the tenor that we expect to maintain is established by these instruments.)

1. How well did the Student Teaching experience meet your expectations?

0	4	9
Not at all	Fairly well	Perfectly

2. How helpful was your cooperating teacher?

0	4	9
Not at all	Fairly Helpful	Ideally so

3. Evaluate your Student Teaching experience.

0	4	9
A failure	Fair	Ideal

4. In your opinion, how has your teaching performance changed since the beginning of this quarter?

0	4	9
Unchanged	Moderately improved	Dramatically improved

5. If any change, how much of this change do you attribute to your cooperating teacher?

0	4	9
None	50%	All

6. What alterations, if any, would you have preferred in the cooperating teacher's attitude or behavior?

7. Would you recommend using this cooperating teacher again?

   With what reservations?

8. Rate your cooperating teacher.

0				4				9
The very worst				Average				The very best

9. How well did the Student Teaching experience meet your needs?

0				4				9
Not at all				Fairly well				Perfectly

10. Assess your desire to teach.

0				4				9
Poorly motivated (Blasé)				Motivated somewhat				Most highly motivated

11. Assess your desire to teach at the beginning of the quarter.

0				4				9
Poorly motivated (Blasé)				Motivated somewhat				Most highly motivated

STUDENT TEACHER

INTERVIEW GUIDE

(Note: paraphrase this statement) Introduction: During this quarter we have asked you to do quite a number of things in order that we might improve upon our ability to make "good" placements of student teachers. We do appreciate your assistance and we are certain that students following you will be equally grateful.

As a final order of business may we ask a few more questions?

(Note: Attempt to validate questionnaire by repeating items 1, 3, 7 and 8.)

What comments would you like to make regarding the quarter and your cooperating teacher? Be as open as you like--you have our pledge of confidence.

As you know, questionnaires, tally sheets and tests cannot accurately produce a "feeling" for what has transpired; nor can they measure true "quality" of an experience. With this in mind, please comment as you see fit on your student teaching experience.

(Note: Look for openings to pursue important ideas and points.)

COOPERATING TEACHER

INTERVIEW GUIDE

(Note: paraphrase this statment) Introduction: During this quarter we have asked you to do quite a number of things in order that we might improve upon our ability to make "good" placements of student teachers. We do appreciate your assistance and we are certain that students will be equally grateful.

As a final order of business may we ask a few more questions?

(Note: Attempt to validate questionnaire by repeating items 1, 3, 7 and 8.)

What comments would you like to make regarding the quarter and your student teacher? Be as open as you like--you have our pledge of confidence.

As you know, questionnaire, tally sheets and tests cannot accurately produce a "feeling" for what has transpired; nor can they measure true "quality" of an experience. With this in mind, please comment as you see fit on your student teacher.

(Note: Look for openings to pursue important ideas and points.)

SUPERVISOR'S QUESTIONNAIRE

1. Did you enjoy working with this particular student teacher?

0 . . . . 4 9

Not at all — Somewhat — Absolutely

2. Relative to other experience with student teachers, how did working with this student during the quarter compare?

0 . . . . 4 9

Worst — Average — Best

3. How did your student teacher's performance change since the beginning of the quarter?

0 . . . . 4 9

Unchanged — Moderately improved — Dramatically improved

4. If any change, how much of it do you attribute to you and your suggestions? (Please be frank)

0 . . . . 4 9

None — 50% — All

5. What alterations, if any, would you have made in the student teacher's attitude or behavior?

6. Would you want to work with a similar student teacher again?
With what reservation?

7. Rate your student teacher in comparison to others you may have had and to others you have known about.

0 . . . . 4 9

The very worst — Average — The very best

8. Assess the relationship of the cooperating teacher and the student teacher.

0	4	9
The very worst	Somewhat compatible	The very best

9. Assess the student teacher's desire to teach.

0	4	9
Very poorly motivated (Blasé)	Motivated somewhat	The most highly motivated

10. Assess the student teacher's desire to teach at the beginning of the quarter.

0	4	9
Very poorly motivated (Blasé)	Motivated somewhat	The most highly motivated

APPENDIX B

FACTOR ANALYSES OF THE Q-SORT AND QUESTIONNAIRES

A questionnaire was mailed to all prospective cooperating teachers in Salt Lake and Granite School Districts. This questionnaire consisted of (1) questions seeking the same demographic information from the cooperating teacher as was sought from the student teacher, and (2) fifteen statements extracted from the Q-sort instrument which the prospective cooperating teacher was asked to react to on a "suitable" or "unsuitable" basis (see Appendix A): that is, the cooperating teacher responds to whether his classroom atmosphere and his own personality is suitable or unsuitable to that of the described student teacher. These statements were carefully selected so as to provide some perspective of cooperating teacher typologies.

The fifteen statements were then factor analyzed first to gain information for matching and second to determine if cooperating teachers, matched with participants in the five groups, represented equal samples drawn from populations which were themselves distributed normally. Seven rotations of the factor matrix produced seven factors having Eigen values of 1.00000 or greater. These seven factors accounted for sixty-two per cent of the total variance as shown in Table 2. The rotated factor matrix contained the factor weightings for each item and is shown in Table 3.

TABLE 2

EIGEN VALUES AND CUMULATIVE PROPORTIONS OF TOTAL VARIANCE

Factors	Eigen Values	Cumulative Proportion of Total Variance
One (Friendly)*	1.86898	.1246
Two (Reluctant)	1.68159	.2367
Three (Assured-Independent)	1.36239	.3275
Four (Innovative-Confident)	1.23023	.4095
Five (Egalitarian)	1.14391	.4858
Six (Traditional)	1.04919	.5558
Seven (Self-conscious, subject-centered)	1.03377	.6247

*See following pages for description of these factors

Factor 1 was labeled the Friendly Factor since the single contributing item (item number 53) dealt with a student teacher who desired a close, friendly relationship with the cooperating teacher. The item was stated thus: "A student who prefers a very warm and friendly cooperating teacher (versus one who prefers a more reserved person)."

Factor 2 was termed the Reluctant Factor since the two items composing this factor described a student teacher who was not overly-enthused about or failed to recognize the importance of the student teaching experience. The items were: Number 50: "A student who wishes to observe for several weeks (versus one who is anxious to assume early responsibility for the class); and, Number 56: "A student who hopes that his cooperating teacher will not be a stickler for such things as punctuality and will allow him to be absent when he must study or work."

Factor 3 was entitled the Assured-Independent Factor. As the term implies, the items in this factor describe a student who is capable of evaluating himself and is appreciative of constructive criticism. The items in this group were: Number 49: "A student who welcomes constructive criticism of his teaching (versus one who would primarily prefer only reinforcement)"; and, Number 51: "A student to whom it is important to be able to use his own teaching techniques (versus one who is more than willing to assume the cooperating teacher's methods)."

Factor 4 was labeled the Innovative-Confident Factor since the two items weighted heavily in this factor describe a student who desires change in the schools and is confident of his ability. The items contributing to this factor are: Number 47: "A student who believes that the public schools are presently and have been far too traditional in their approach (versus one who thinks that the schools are generally doing an excellent job)", and, Number 52: "A student with great confidence (versus one who is in obvious need of support)".

Factor 5 was termed the Egalitarian Factor since the three items within this group suggest a student who believes in professional and personal equality. The items within this factor are: Number 54: "A student who desires complete autonomy in the assignment of grades"; Number 55: "A student who expects to be treated as a professional equal by the cooperating teacher"; and, Number 58: "A student who feels that students should play a major role in determining what will be taught and how".

Factor 6, the Traditional Factor, describes a person who is structured and orderly in his methods, whose prime concern is dispensing information. Items in this group (Numbers 45 and 46) are stated thus: "A student who needs a well disciplined and orderly classroom (versus one who can tolerate some noise and disorder)", and "A student who is well-grounded in and emphasizes the subject matter over personal development of students (although he is of course concerned about the latter)".

Factor 7 was called the Self-conscious, Subject-centered Factor. The items in this grouping somewhat overlap those in factor 6 in that subject matter is emphasized. However, a person in this category is perceived to be much more timid in his position. Items contributing to this factor are: Number 48: "A student who prefers that the cooperating teacher leave the room when he begins teaching and that she generally remain away after that", Number 57: "A student who feels that textbooks should provide the major focus of the class" and Number 59: "A student who feels that although teaching is more than just a job, we should be annoyed when people say that we should worry more about service to children than about such unprofessional issues as salaries and pay for extra-curricular assignments". Question number 48 might be construed to indicate a person simply desiring autonomy and having confidence; however, the pattern of responses reveal that student teachers who affirmatively respond to this item lack confidence and do not wish to be observed.

In addition to the value gained from matching students with cooperating teachers, the questionnaire was valuable in demonstrating the equalness of classroom typologies among the five groups. The procedure used was to contrast mean factor scores for the five groups by the use of a one-way analysis of variance on each factor. The procedure is to calculate factor scores on each factor for each individual and then to compare factor score means among the five groups. No significant differences were obtained.

TABLE 3

FACTOR COMPOSITIONS AND FACTOR LOADINGS
OF COOPERATING TEACHERS' QUESTIONNAIRE
USED FOR MATCHING

Compositions (Item No's)	Factors						
	1	2	3	4	5	6	7
53*	.90						
50		.76					
56		.65					
4			.81				
51			.78				
47				.74			
52				.66			
54					.61		
55					.73		
58					.48		
45						-.83	
46						-.60	
48							.54
57							.55
59							.77

*See Appendix A, pages 37 and 38, for items. Pages 46-48 describe these factors.

TABLE 4

FACTOR COMPOSITIONS, FACTOR LOADINGS AND EIGEN VALUES OF THE COOPERATING TEACHERS QUESTIONNAIRE USED IN THE ASSESSMENT OF STUDENT TEACHERS AT END OF QUARTER

Item No's	Factors 1	2
1	.91	
2	.89	
3	.96	
6	.92	
7	.91	
8	.81	
Eigen Value	5.27986	
4		.64
5		.82
Eigen Value		1.19775

The two factors listed account for 81% of the total variance.

Items constituting Factor 1 referred to evaluations of the student teachers performance by the cooperating teacher. Items in Factor 2 refer to change in performance of student teachers as observed by the C.T. A copy of the questionnaire items are included in Appendix A, pp. 37 and 38.

TABLE 5

FACTOR COMPOSITIONS, FACTOR LOADINGS AND EIGEN VALUES OF THE STUDENT TEACHER QUESTIONNAIRE USED IN THE ASSESSMENT OF HIS OPINION ABOUT HIS EXPERIENCES OF THE QUARTER

Item No's	Factors 1	2	3
1	.71		
3	.85		
4	.60		
7	.79		
8	.80		
Eigen Value	3.90578		
2		.92	
5		.74	
6		.94	
Eigen Value		1.80555	
9			-.91
Eigen Value			1.02473

The three factors account for 81% of the total variance.

The items grouped under Factor 1 constitute an evaluation of the experience by the student teacher and his present desire to teach. High scores here indicate a high evaluation.

The items in Factor 2 refers to the evaluation of the cooperating teacher by the student teacher. As in Factor 1, a high score means a high evaluation.

The lone item in Factor 3 refers to the student teacher's desire to teach at the beginning of the quarter. A low score here indicates a high desire.

The items comprising the questionnaire are included in Appendix A, pp. 39 and 40.

TABLE 6

FACTOR COMPOSITIONS, FACTOR WEIGHTINGS AND EIGEN VALUES FOR THE SUPERVISOR'S QUESTIONNAIRE USED IN THE ASSESSMENT OF STUDENT TEACHERS AT THE END OF THE QUARTER

Item No's	Factors 1	2
1	.75	
2	.82	
5	.83	
6	.71	
Eigen Value	3.90102	
3		.64
4		.82
7		.64
8		.68
Eigen Value		1.23379

These two factors constitute 64% of the total variance of this questionnaire.

Factor 1 comprises those items evaluating the student teacher and assessing the relationship of the cooperating teacher and the student teacher. High scores on this factor represent high evaluations.

The items in Factor 2 describe the change in student teacher behavior and also change in the student teacher's desire to teach. High scores on this factor represents great change. A copy of the questionnaire can be found in Appendix A, pp. 43 and 44.

TABLE 7

FACTOR COMPOSITIONS, FACTOR LOADINGS AND EIGEN VALUES FOR THE Q-SORT (USED FOR PERSONALITY MATCHING)

Item No's	Factors 1	2	3	4
5	.68			
6	.53			
27	-.71			
Eigen Value	3.08282			
10		-.48		
18		.81		
22		.74		
Eigen Value		2.42145		
9			.48	
14			.61	
16			-.48	
17			-.73	
26			-.52	
32			.74	
Eigen Value			1.51187	
1				-.74
3				.61
11				-.75
33				-.68
Eigen Value				1.25732

It is quite evident from Table 7 that each factor has bi-polar values. This does not mean that the items within the factor are inconsistent, but rather some items are stated positively and some are stated negatively. In both instances they describe the same trait about the individual.

Items in Factor 1 describe an individual who appears insecure, dependent and somewhat traditional in his approach. These items were: Number 5: "I would prefer that my cooperating teacher leave the room when I begin student teaching and generally remain away after that;" Number 26: "I would prefer that the classroom in which student teacher has an established set of rules and regulations;" and 27: "I would prefer observing as long as I can before assuming the full burden of teaching."

Factor 2 items indicate a very open person and has been labeled the Autonomy Factor. These items would also indicate a person who wants to improve and accepts criticism willingly. Items in this factor include: Number 10: "I worry about visits from the University supervisor;" Number 18: "I welcome constructive criticism; in fact, I hope that my cooperating teacher will be frank in his analysis of my teaching;" and Number 22: "I am anxious to accept responsibility for the major portion of the class and hope that my C.T. will not be reluctant to relinquish it.

Factor 3 has been labeled the Innovative Factor. This type of person is clearly anti-textbook, and non-structured. The following items comprise this factor: Number 9: "I believe that the public schools are presently and have been far too traditional and rigid in their approach;" Number 14: "As a teacher I would like to try as many new and different ideas as I can;" Number 16: "Generally the movement of students around the classroom for miscellaneous reasons should be curbed;" Number 17: "I would prefer working with a cooperating teacher who emphasizes the subject matter in his classroom;" Number 26: "I would prefer that the classroom in which I student teach has an established set of rules and regulations;" and Number 32: "It is important to me to have the opportunity to use my own teaching techniques rather than be expected to assume the style and methods of the cooperating teacher."

Factor 4 was termed the Progressive Factor since the items in this factor clearly identify the progressive type individual. The items included in this factor were: Number 1: "I would prefer working with a cooperating teacher who de-emphasizes classroom discipline and order;" Number 3: "I would like to be allowed complete autonomy in the assignment of grades;" Number 11: "Noise does not bother me much if it contributes to the objectives of the class;" and Number 33: "The physical arrangement of the classroom and student seating should vary with the nature of the tasks undertaken in the classroom."

APPENDIX C

MAIN ANALYSIS

All values in the following tables were calculated in the manner illustrated for the Minnesota Teachers Attitude Inventory. (Pages 56 and 57)

TABLE 8

MEAN SCORES ON THE MINNESOTA TEACHERS ATTITUDE INVENTORY (MTAI) POST TEST BETWEEN AND WITHIN THE FIVE GROUPS

TREATMENT GROUPS									
G_1		G_2		G_3		G_4		G_5	
R_1	R_2	R_1	R_2	R_1	R_2	R_1	R_2	R_1	R_2
68.80	56.80	47.80	58.80	56.60	57.80	69.80	50.80	37.00	57.00
62.80		53.30		57.20		60.30		47.00	

Note: MTAI data are raw scores. The mean scores for each group and within each group are in the above table. Using Group I as an example, the MTAI raw score in this, the control group, is 62.80. Within this group, those student teachers who had assessed their cooperating teacher as above the median in comparison to other cooperating teachers at the outset (R_2) had a mean MTAI post test raw score of 56.80. Those who had assessed their cooperating teachers below the median had a mean of 68.80.

TABLE 9

TWO WAY ANALYSIS OF VARIANCE TABLE FOR THE MTAI POST TEST

SOURCE	d/f	SS	MS	F Value
Between Conditions	4	1543.88	385.97	< 1
$\hat{\Psi}_1$ Control vs. All Others	1	557.78	557.78	< 1
$\hat{\Psi}_2$ Personality vs. Non-Personality	1	115.60	115.60	< 1
$\hat{\Psi}_3$ Demographic vs. Non-Demographic	1	156.47	156.47	< 1
$\hat{\Psi}_4$ Interaction of Personality and Demographic	1	714.03	714.03	< 1
Within Conditions	5	2568.60		
R in C_1	1	360.00	360.00	< 1
R in C_2	1	302.00	302.00	< 1
R in C_3	1	3.60	3.60	< 1
R in C_4	1	902.50	902.50	< 1
R in C_5	1	1000.00	1000.00	< 1
Error	40	46420.79	1543.88	

The above table gives both between group (conditions) and within group comparisons. The degrees of freedom, sum of squares, mean square within, and F values are presented. The critical value (value needed to reject the null hypothesis) at the .05 level for 1, 40 degrees of freedom is 4.08. Since all F values are < 1, we fail to reject the null hypothesis in all cases. Therefore, there are no differences among the five groups in terms of post-test scores on the MTAI.

The final explanation required for full understanding is the calculation for each comparison, which is the calculation producing the F values. All values of $\hat{\Psi}$ (Between Conditions) were arrived at by the general formula $\hat{\Psi} = \frac{N_0 \left[\bar{X}_1 - \frac{1}{4}(\bar{X}_2 + \bar{X}_3 + \bar{X}_4 + \bar{X}_5)\right]^2}{\text{Sum of Coefficients Squared}}$.

Using control vs. all other variance squares in the MTAI, this becomes:

$$\hat{\Psi}_1 = \frac{10\left[62.8 - \frac{1}{4}(53.3 + 57.2 + 60.3 + 47.0)\right]^2}{1^2 + 4(1/16)} = 557.78$$

$$F = \frac{MS_B \text{ (Mean Square Between)}}{MS_W \text{ (Mean Square Within)}} = \frac{557.78}{1543.88} = < 1$$

where $\hat{\Psi}$, is the comparison of interest (e.g., Group I versus all other groups), N is the number of subjects in each treatment group, and $\bar{X}$'s are the means for the treatment groups.

As can be noted in the analysis of variance table,
$\hat{\Psi}_2$ is P vs $\bar{P}$ (P is Personality)
$\hat{\Psi}_3$ is D vs $\bar{D}$ (D is Demographic)
$\hat{\Psi}_4$ is the interaction of P and D

F values <u>within</u> conditions are calculated in a similar manner.

TABLE 10

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 1 OF THE COOPERATING TEACHER QUESTIONNAIRE*

MEANS	G_1		G_2		G_3		G_4		G_5	
	53.29	53.81	49.24	51.56	50.04	51.56	46.89	48.23	52.17	52.01
	53.55		52.24		51.14		47.56		52.09	

SOURCE	d/f	SS	MS	F
Between Cond	4	198.71	49.60	2.6
Ψ_1	1	84.50	84.50	4.36
Ψ_2	1	8.83	8.83	<1
Ψ_3	1	69.17	69.17	3.57
Ψ_4	1	36.10	36.10	1.+
Between R in C	5	30.84		
R in C_1	1	.70	.70	<1
R in C_2	1	13.45	13.45	<1
R in C_3	1	12.10	12.10	<1
R in C_4	1	4.48	4.48	<1
R in C_5	1	.06	.06	<1
Error	40	774.12	19.35	

*Values are factor scores standardized with a mean of 50 and a standard deviation of 5. (This note applies to all factor scores in the following tables.)

This factor potently expresses the cooperating teacher's assessment of the student teacher's performance at the end of the quarter. A cursory view of the five mean scores indicate that student teachers in Group I were assessed the highest followed by student teachers in Group V. A similar inspection of the mean scores within treatment groups show higher assessments, in four of five cases, for the student teachers who assessed their cooperating teachers as above the median at the beginning of the quarter. The two way analysis of variance showed significant F scores on comparison 1. Upon examining the mean scores, it is clear that the control group students were, in fact, evaluated higher than students in the other four groups combined.

TABLE 11

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 2 OF THE COOPERATING TEACHER QUESTIONNAIRE

MEANS	G_1	G_2	G_3	G_4	G_5
	53.18 | 51.26	50.30 | 53.28	51.35 | 52.06	47.35 | 47.36	49.74 | 51.68
	52.22	51.79	51.70	47.36	50.71

SOURCE	d/f	SS	MS	F
Between Cond	4	156.57	39.14	1.77
Ψ_1	1	26.76	26.76	1.+
Ψ_2	1	73.44	73.44	3.34
Ψ_3	1	26.89	26.89	1.+
Ψ_4	1	28.90	28.90	1.+
Between R in C	5	42.09		
R in C_1	1	9.20	9.20	<1
R in C_2	1	22.20	22.20	1.+
R in C_3	1	2.28	2.28	<1
R in C_4	1	.00	.00	<1
R in C_5	1	9.40	9.40	<1
Error	40	877.98	21.95	

This factor portrays the cooperating teacher's perception of the change in the student teacher's performance throughout the quarter and the amount of change that the cooperating teacher attributes to his own guidance. Again, a visual inspection of the data shows the control group to have the highest mean and Group IV to have the lowest mean. Further, it appears that in this case the student teachers who ranked their cooperating teacher above the median at the beginning of the quarter had lower mean scores in Group I and higher scores in the other four groups. The analysis of variance found these means not to be significantly different.

TABLE 12

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 1 OF THE STUDENT TEACHER QUESTIONNAIRE

MEANS	G_1		G_2		G_3		G_4		G_5	
	47.72	49.56	49.71	50.93	48.25	52.71	53.02	52.08	48.91	50.37
	48.64		50.32		50.48		52.55		49.64	

SOURCE		d/f	SS	MS	F
Between Cond		4	82.71	20.17	1.02
Ψ_1	1		37.28	37.28	1.+
Ψ_2	1		4.90	4.90	<1
Ψ_3	1		18.77	18.77	<1
Ψ_4	1		23.70	23.70	1.+
Between R in C		5	69.46		
R in C_1	1		8.45	8.45	<1
R in C_2	1		3.70	3.70	<1
R in C_3	1		49.73	49.73	2.+
R in C_4	1		2.20	2.20	<1
R in C_5	1		5.30	5.30	<1
Error		40	791.45	19.78	

Factor 1 of the Student Teacher's Questionnaire, which was also administered at the end of the quarter, reflects the student's evaluation of the quarters experience and his desire to teach at the end of the quarter. Visually, it appears that the reverse of the pattern established on the Cooperating Teacher's Questionnaire is the case. That is, the control group shows the lowest mean score and Group IV shows the highest score. Again, in four out of five cases those students who assessed their cooperating teacher above the median at the outset appeared to show higher scores on this factor as they evaluated the quarter in retrospect.

TABLE 13

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 2 OF THE STUDENT TEACHER QUESTIONNAIRE

MEANS	G_1	G_2	G_3	G_4	G_5
	49.20 | 52.25	48.17 | 51.14	46.58 | 51.19	52.19 | 52.35	48.60 | 51.19
	50.72	49.66	48.89	52.27	49.89

SOURCE		d/f	SS	MS	F
Between Cond		4	66.40	16.60	< 1
Ψ_1	1		2.42	2.42	< 1
Ψ_2	1		32.40	32.40	1.+
Ψ_3	1		24.96	24.96	< 1
Ψ_4	1		6.60	6.60	< 1
Between R in C		5	115.44		
R in C_1	1		23.40	23.40	< 1
R in C_2	1		20.90	20.90	< 1
R in C_3	1		52.90	52.90	2.+
R in C_4	1		.06	.06	< 1
R in C_5	1		16.90	16.90	< 1
Error		40	1066.23	26.66	

This factor dealt with the student teacher's evaluation of his cooperating teacher. A visual inspection of the means suggests the highest assessment in Group IV with the other four groups approximately equal. Within group comparisons followed the same pattern as shown in the several tables above; that is, students who had assessed their cooperating teacher above the median at the outset clearly had the higher mean scores in evaluating their cooperating teacher at the end. The analysis of variance table, however, shows no significant differences on this factor.

TABLE 14

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 3 OF THE STUDENT TEACHER QUESTIONNAIRE

MEANS	G_1	G_2	G_3	G_4	G_5
	54.28 | 50.32	44.50 | 48.61	47.98 | 52.63	49.24 | 48.46	48.42 | 48.99
	52.30	46.56	50.30	48.85	48.68

SOURCE		d/f	SS	MS	F
Between Cond		4	181.17	45.29	2.58
Ψ_1	1		109.52	109.52	6.27
Ψ_2	1		1.15	1.15	<1
Ψ_3	1		32.40	32.40	1.+
Ψ_4	1		38.42	38.42	2.+
Between R in C		5	137.84		
R in C_1	1		39.20	39.20	2.+
R in C_2	1		42.44	42.44	2.+
R in C_3	1		53.82	53.82	3.07
R in C_4	1		1.52	1.52	<1
R in C_5	1		.68	.68	<1
Error		40	696.82	17.42	

On this factor, which is the student teacher's desire to teach at the beginning of the quarter, high scores represent a poor desire to teach at the beginning of the quarter. Hence, an interpretation of the means (high scores indicate low desire on this factor) suggests control group students to have assessed their desire at the outset lower than the other four groups. Within group comparisons appear to be mixed. The analysis of variance reveals that, in fact, control group students did show a significantly poorer desire to teach at the outset.

TABLE 15

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 1 OF THE SUPERVISOR'S QUESTIONNAIRE

MEANS	G_1		G_2		G_3		G_4		G_5	
	49.31	50.19	51.26	51.35	49.86	51.70	47.46	49.81	51.66	45.40
	49.75		51.31		50.78		48.63		48.53	

SOURCE		d/f	SS	MS	F
Between Cond		4	62.16	15.50	<1
Ψ_1	1		.03	.03	<1
Ψ_2	1		21.61	21.61	<1
Ψ_3	1		1.02	1.02	<1
Ψ_4	1		.04	.04	<1
Between R in C		5	122.18		
R in C_1	1		1.94	1.94	<1
R in C_2	1		.03	.03	<1
R in C_3	1		8.46	8.46	<1
R in C_4	1		13.92	13.92	<1
R in C_5	1		97.97	97.97	4.34
Error		40	901.95	22.55	

This factor is the university supervisor's assessment of the student teacher and cooperating teacher relationship. Supervisors assessed the best relationship in Group II, which was the Group matched with teachers from the pool formed when inferior teachers were eliminated. Within group comparisons followed the same pattern as shown above in four of five cases. However, the only significant F values given by the analysis of variance was revealed in this deviant case. Within Group V, university supervisors assessed the relationship to be the best in those cases where students had assessed their cooperating teachers as below the median at the beginning of the quarter.

TABLE 16

THE ANALYSIS OF VARIANCE TABLE FOR FACTOR 2 OF THE SUPERVISOR'S QUESTIONNAIRE

MEANS	G_1	G_2	G_3	G_4	G_5
	48.12 | 49.69	50.27 | 50.55	51.81 | 54.27	50.03 | 50.68	51.11 | 45.52
	48.90	50.41	53.04	50.36	48.32

SOURCE		d/f	SS	MS	F
Between Cond		4	133.63	33.40	1.79
Ψ_1	1		21.25	21.25	1.+
Ψ_2	1		57.12	57.12	2.+
Ψ_3	1		.09	.09	<1
Ψ_4	1		54.76	54.76	2.+
Between R in C		5	100.83		
R in C_1	1		6.17	6.17	<1
R in C_2	1		.20	.20	<1
R in C_3	1		15.13	15.13	<1
R in C_4	1		1.09	1.09	<1
R in C_5	1		78.40	78.40	3.9
Error		40	790.21	19.76	

Factor 2 of the university supervisor's questionnaire refers to the supervisor's assessment of the change in student teacher behavior and the student teacher's desire to teach. The highest assessment was given to Group III, those matched on demographic variables, and the lowest was given to the control group. In four of five groups, means favored the student teachers who had assessed their cooperating teacher as above the median at the beginning of the quarter.

TABLE 17

ANALYSIS OF VARIANCE TABLE FOR TIME SPENT
WITH THE COOPERATING TEACHER BY THE
STUDENT TEACHER ON TIME BUDGET ANALYSIS, TRIAL 1

MEANS

G_1		G_2		G_3		G_4		G_5	
37.00	42.00	24.20	38.00	19.40	30.60	37.80	39.60	19.80	34.20
39.50		31.10		25.00		38.70		27.00	

SOURCE		d/f	SS	MS	F
Between Cond		4	1756.12	439.00	<1
Ψ_1	1		655.22	655.22	1.12
Ψ_2	1		230.40	230.40	<1
Ψ_3	1		792.10	792.10	1.+
Ψ_4	1		78.40	78.40	<1
Within Conditions		5	1378.70		
R in C_1	1		62.50	62.50	<1
R in C_2	1		476.10	476.10	<1
R in C_3	1		313.60	313.60	<1
R in C_4	1		8.10	8.10	<1
R in C_5	1		518.40	518.40	<1
Error		40	23378.79	584.47	

The theory behind time budget analysis as pertains to this study, suggests two possibilities: (1) it might be that a cooperating teacher and student teacher who are well matched will spend more time together since they are more compatible; or (2) a cooperating teacher might tend to spend more time with the student teacher whom he perceives to be in the greatest need of help. The variable represented in the above table is the time spent by the cooperating teacher and student teacher together in the school on the first trial, which was completed by the second week of the quarter. Mean scores appear to show the greatest time spent in the control group and the least time spent in Group III and V. In all cases, within group comparisons indicate greater time spent in the situations where student teachers assessed their cooperating teacher as above the median at the beginning of the quarter. The analysis of variance table, however, showed none of these mean scores to be significantly different.

TABLE 18

ANALYSIS OF VARIANCE TABLE FOR WHETHER THE COOPERATING TEACHER WAS PRESENT ON TIME BUDGET ANALYSIS, TRIAL 1

MEANS	G_1		G_2		G_3		G_4		G_5	
	1.20	1.20	.40	.60	.60	1.20	1.00	1.40	.40	.80
	1.20		.50		.90		1.20		.60	

SOURCE		d/f	SS	MS	F
Between Cond		4	4.28	1.07	2.5
C_1	1		1.28	1.28	2.9
C_2	1		.40	.40	<1
C_3	1		1.00	1.00	2.+
C_4	1		2.50	2.50	5.81
Between R in C		5	1.80		
R in C_1	1		0	0	<1
R in C_2	1		.10	.10	<1
R in C_3	1		.90	.90	2.+
R in C_4	1		.40	.40	<1
R in C_5	1		.40	.40	<1
Error		40	17.20	.43	

This variable considers whether or not the cooperating teacher was present in the classroom while the student teacher was teaching. The theory suggests the same two possibilities which were discussed following Table 17. Visual inspection of the means shows cooperating teachers to be present most often in Groups I and IV and least often in Groups II and V. In all cases, cooperating teachers were present more often where students, at the beginning of the quarter, gave the higher evaluations of their cooperating teachers. The F values of 5.81 in comparison four, which shows the interaction of personality and demographic matching, indicates that the cooperating teachers in conditions three and four to be present more often than in 2 and 5.

TABLE 19

ANALYSIS OF VARIANCE TABLE FOR NUMBER OF CLASSES TAUGHT BY THE STUDENT TEACHER ON TIME BUDGET ANALYSIS, TRIAL 1

MEANS	G_1		G_2		G_3		G_4		G_5	
	1.80	1.80	1.60	1.20	1.60	1.60	1.80	1.80	1.80	1.40
	1.80		1.40		1.60		1.80		1.60	

SOURCE	d/f	SS	MS	F
Between Cond	4	1.12	.28	<1
C_1	1	.32	.32	<1
C_2	1	.40	.40	<1
C_3	1	0	0	<1
C_4	1	.40	.40	<1
Between R in C	5	.80		
R in C_1	1	0	0	<i
R in C_2	1	.40	.40	<1
R in C_3	1	0	0	<1
R in C_4	1	0	0	<1
R in C_5	1	.40	.40	<1
Error	40	19.60	.49	

There were no significant F values on this variable , which was the number of classes taught by the student teacher on the first trial. Apparently, the variations on this variable were negligable. The theory was that careful matches would lead to greater trust and confidence on the part of the cooperating teacher and thus that the student teacher would be teaching more classes.

TABLE 20

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE STUDENT TEACHING EXPERIENCE ON TIME BUDGET ANALYSIS, TRIAL 1

MEANS	G_1		G_2		G_3		G_4		G_5	
	6.20	7.80	6.40	6.20	5.60	7.40	7.00	7.40	5.80	6.80
	7.00		6.30		6.50		7.20		6.30	

SOURCE	d/f	SS	MS	F
Between Cond	4	6.92	1.73	<1
Ψ_1	1	1.36	1.36	<1
Ψ_2	1	.30	.30	<1
Ψ_3	1	1.20	1.20	<1
Ψ_4	1	3.00	3.00	<1
Between R in C	5	17.50		
R in C_1	1	6.40	6.40	2.02
R in C_2	1	.10	.10	<1
R in C_3	1	8.10	8.10	2.56
R in C_4	1	.40	.40	<1
R in C_5	1	2.50	2.50	<1
Error	40	126.80	3.17	

This variable is the rating of the situation in which the student teacher found himself at the beginning of the quarter. Visually, Groups I and IV demonstrated the highest mean scores although the variance was very small. It is interesting to note that the mean assessment of the experience was about 7 on a 9 point scale; in other words, nearly all student teachers assessed their experience very high. Within group comparisons, show in four or five cases the same pattern exhibited in each case above. As can be observed, there were no significant differences between conditions nor within conditions.

TABLE 21

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE COOPERATING TEACHER ON TIME BUDGET ANALYSIS, TRIAL 1

MEANS	G_1		G_2		G_3		G_4		G_5	
	6.20	8.40	6.60	8.80	5.60	8.60	6.40	8.20	7.00	8.40
	7.30		7.70		7.10		7.30		7.70	

SOURCE		d/f	SS	MS	F
Between Cond		4	2.88	.72	<1
Ψ_1	1		.16	.16	<1
Ψ_2	1		.10	.10	<1
Ψ_3	1		.10	.10	<1
Ψ_4	1		2.50	2.50	1.48
Between R in C		5	59.70		
R in C_1	1		12.10	12.10	7.16
R in C_2	1		12.10	12.10	7.16
R in C_3	1		22.50	22.50	13.30
R in C_4	1		8.10	8.10	4.79
R in C_5	1		4.90	4.90	2.90
Error		40	67.60	1.69	

This variable is the rating of the cooperating teacher early in the quarter. It will be noted that this is the variable upon which students were sorted within groups according to how they assessed their cooperating teacher. Therefore, of course, several within group comparisons are significant. It is important to note that within the "totally matched" Group (Group V) differences were negligible. In other words, this group was apparently, uniformly the "most happy."

TABLE 22

ANALYSIS OF VARIANCE TABLE FOR TIME SPENT WITH THE COOPERATING TEACHER BY THE STUDENT TEACHER ON TIME BUDGET ANALYSIS, TRIAL 2

MEANS	G_1		G_2		G_3		G_4		G_5	
	10.00	37.00	18.80	21.20	20.40	29.40	35.40	14.60	15.20	31.80
	23.50		20.00		24.90		25.00		23.50	

SOURCE		d/f	SS	MS	F
Between Cond		4	163.88	40.97	<1
Ψ_1	1		.24	.24	<1
Ψ_2	1		32.40	32.40	<1
Ψ_3	1		28.90	28.90	<1
Ψ_4	1		102.40	102.40	<1
Between R in C		5	3809.90		
R in C_1	1		1822.50	1822.50	4.43
R in C_2	1		14.40	14.40	<1
R in C_3	1		202.50	202.50	<1
R in C_4	1		1081.60	1081.60	2.63
R in C_5	1		688.90	688.90	1.67
Error		40	16457.99	411.45	

The time spent at trial 2, which was approximately at mid-quarter time, is reflected in this variable. By this time, mean scores indicate very small differences in the amount of time spent between groups although, within groups, on four of five occasions more time was spent where students rated their cooperating teachers above the median. The F score for the differences within conditions is significant for Group I.

TABLE 23

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE STUDENT TEACHING EXPERIENCE ON TIME BUDGET ANALYSIS, TRIAL 2

MEANS	G_1	G_2	G_3	G_4	G_5
	7.00 7.20	6.40 | 7.20	5.80 | 8.20	7.20 | 7.80	6.60 | 7.20
	7.10	6.80	7.00	7.50	6.90

SOURCE	d/f	SS	MS	F
Between Cond	4	2.92	.73	<1
$\hat{\Psi}_1$	1	.02	.02	<1
$\hat{\Psi}_2$	1	.90	.90	<1
$\hat{\Psi}_3$	1	.40	.40	<1
$\hat{\Psi}_4$	1	1.60	1.60	<1
Between R in C	5	17.90		
R in C_1	1	.10	.10	<1
R in C_2	1	1.60	1.60	<1
R in C_3	1	14.40	14.40	7.59
R in C_4	1	.90	.90	<1
R in C_5	1	.90	.90	<1
Error	40	76.00	1.90	

This is the student teacher's trial 2 rating of the experience. There are no significant differences between conditions nor are the observed differences in mean scores large. The general patterns within conditions, which is now clearly established, occurred within all five conditions although only within condition 3 was the difference significant.

TABLE 24

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE COOPERATING TEACHER ON TIME BUDGET ANALYSIS, TRIAL 2

MEANS	G_1	G_2	G_3	G_4	G_5
	6.60 | 8.40	7.20 | 8.00	5.20 | 7.80	7.60 | 8.60	7.00 | 7.60
	7.50	7.60	6.50	8.10	7.30

SOURCE		d/f	SS	MS	F
Between Cond		4	13.60	3.40	1.+
$\hat{\Psi}_1$	1		.12	.12	<1
$\hat{\Psi}_2$	1		4.23	4.23	1.+
$\hat{\Psi}_3$	1		9.03	9.03	2.95
$\hat{\Psi}_4$	1		.23	.23	<1
Between R in C		5	30.00		
R in C_1	1		8.10	8.10	2.64
R in C_2	1		1.60	1.60	<1
R in C_3	1		16.90	16.90	5.52
R in C_4	1		2.50	2.50	<1
R in C_5	1		.90	.90	<1
Error		40	122.40	3.06	

By the time of trial 2, within group differences were significant within condition 3 and were in the expected direction. Within all five groups the established pattern was followed.

TABLE 25

ANALYSIS OF VARIANCE TABLE FOR TIME SPENT WITH THE COOPERATING TEACHER BY THE STUDENT TEACHER ON TIME BUDGET ANALYSIS, TRIAL 3

MEANS	G_1	G_2	G_3	G_4	G_5
	32.40 | 20.00	11.60 | 29.40	21.40 | 29.60	53.80 | 26.80	13.60 | 26.60
	26.20	25.50	25.50	40.30	20.10

SOURCE	d/f	SS	MS	F
Between Cond	4	2282.88	570.70	1.11
Ψ_1	1	23.20	23.20	<1
Ψ_2	1	220.90	220.90	<1
Ψ_3	1	1020.10	1020.10	2.09
Ψ_4	1	1020.10	1020.10	2.09
Between R in C	5	4729.60		
R in C_1	1	384.40	384.40	<1
R in C_2	1	1932.10	1932.10	3.98
R in C_3	1	168.10	168.10	<1
R in C_4	1	1822.50	1822.50	3.75
R in C_5	1	422.50	422.50	<1
Error	40	19431.99	485.80	

The final trial was conducted during the last two weeks of the quarter. It is at this time that one would expect to be able to discern the effects of the influence of the cooperating teacher since a considerable amount of time had elapsed. However, there were no significant differences.

Within group comparisons are interesting and informational. In Group I and IV more time was being spent in cases where students had assessed their cooperating teacher as being below the median, while the other three groups showed the converse. The analysis of variance table shows no significant F values. The reader is asked to keep in mind that it was Group IV that had the very highest mean of time spent and that significantly more time was spent with those student teachers who had assessed their cooperating teachers below the median. At the same time, Group II subjects, who had spent far less time with their cooperating teachers, showed that, within this Group, more time was spent with those cooperating teachers rated high.

TABLE 26

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE STUDENT TEACHING EXPERIENCE ON TIME BUDGET ANALYSIS, TRIAL 3

MEANS

G_1		G_2		G_3		G_4		G_5	
6.60	8.00	7.20	7.00	6.40	8.20	8.20	8.00	6.60	7.60
7.30		7.10		7.30		8.10		7.10	

SOURCE	d/f	SS	MS	F
Between Cond	4	6.88	1.72	1.+
Ψ_1	1	.08	.08	<1
Ψ_2	1	1.60	1.60	<1
Ψ_3	1	1.60	1.60	<1
Ψ_4	1	3.60	3.60	2.14
Between R in C	5	15.70		
R in C_1	1	4.90	4.90	2.90
R in C_2	1	.10	.10	<1
R in C_3	1	8.10	8.10	4.80
R in C_4	1	.10	.10	<1
R in C_5	1	2.50	2.50	1.+
Error	40	67.20	1.68	

The highest rating of the experience of the quarter was also given by the students in Group IV. In cases of Groups II and IV, within group means appeared in favor of those students who rated their cooperating teachers lower at the outset; but, it was in Group III, which followed the general pattern, that significant difference occurred.

TABLE 27

ANALYSIS OF VARIANCE TABLE FOR THE STUDENT TEACHER'S RATING OF THE COOPERATING TEACHER ON TIME BUDGET ANALYSIS, TRIAL 3

MEANS	G_1		G_2		G_3		G_4		G_5	
	6.60	8.80	7.20	8.20	5.80	7.80	8.20	8.40	7.40	7.60
	7.70		7.70		6.80		8.30		7.50	

SOURCE	d/f	SS	MS	F
Between Cond	4	11.60	2.90	1.+
Ψ_1	1	.14	.14	<1
Ψ_2	1	4.23	4.23	1.8
Ψ_3	1	7.23	7.23	3.15
Ψ_4	1	.03	.03	<1
Between R in C	5	24.80		
R in C_1	1	12.10	12.10	5.2
R in C_2	1	2.50	2.50	<1
R in C_3	1	10.00	10.00	4.36
R in C_4	1	.10	.10	<1
R in C_5	1	.10	.10	<1
Error	40	91.60	2.29	

Within group significant F values were found within conditions 1 and 3, which were in favor of students who had assessed their cooperating teachers above the median at the beginning of the quarter. All within group means supported the pattern.

TABLE 28

THE ANALYSIS OF VARIANCE TABLE FOR INDIRECT STUDENT TEACHER BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 1

MEANS	G_1		G_2		G_3		G_4		G_5	
	56.60	76.60	43.00	61.00	43.60	91.60	68.00	45.00	54.60	60.40
	66.60		52.00		67.60		56.50		57.50	

SOURCE		d/f	SS	MS	F
Between Cond		4	1838.12	459.53	<1
Ψ_1	1		567.90	567.90	<1
Ψ_2	1		78.40	78.40	<1
Ψ_3	1		688.90	688.90	<1
Ψ_4	1		490.00	490.00	<1
Between R in C		5	8976.60		
R in C_1	1		1000.00	1000.00	<1
R in C_2	1		810.00	810.00	<1
R in C_3	1		5760.00	5760.00	5.7
R in C_4	1		1322.50	1322.50	1.+
R in C_5	1		84.00	84.00	<1
Error		40	40193.19	1004.83	

The remaining 9 variables were developed from the interaction analysis. It should be noted that the first two variables in each trial should be near opposites since the first represents indirect teacher influence and is the desired behavior, and that the second was direct teacher influence and was the undesirable behavior.

The above table reports indirect student teacher behavior on trial 1. It would be expected, at this point, that the cooperating teacher would have had little opportunity to influence student behavior. Mean scores indicate more student teacher indirect behavior in Groups I and III. There was an indication of greater indirect behavior within four of the five groups by those student teachers who had assessed their cooperating teacher as above the median. Of the nine, F values reported, only within condition 3 was there a significant difference and it was in the direction favoring students who had assessed their cooperating teachers above the median.

TABLE 29

THE ANALYSIS OF VARIANCE TABLE FOR DIRECT STUDENT TEACHER BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 1

MEANS	G_1	G_2	G_3	G_4	G_5
	155.60 | 115.60	146.00 | 152.00	162.60 | 116.80	142.80 | 181.00	107.60 | 110.00
	135.60	149.00	139.70	161.90	108.80

SOURCE		d/f	SS	MS	F
Between Cond		4	15484.99	3871.00	1.5
Ψ_1	1		178.40	178.40	<1
Ψ_2	1		810.00	810.00	<1
Ψ_3	1		9734.40	9734.40	3.2
Ψ_4	1		4796.10	4796.10	1.+
Between R in C		5	12996.59		
R in C_1	1		4000.00	4000.00	1.+
R in C_2	1		90.00	90.00	<1
R in C_3	1		5244.10	5244.10	1.+
R in C_4	1		3648.10	3648.10	1.+
R in C_5	1		14.40	14.40	<1
Error		40	108654.37	2716.36	

In terms of direct student teacher behavior, the greater amount was demonstrated by Group IV and the least amount by Group V. Within group mean scores demonstrated no consistent pattern and none were significant. Comparison 3 showed the only sizeable difference in mean scores which were in favor of those students matched demographically versus those who were not so matched, (not significant). (Since high scores are undesirable behavior, lower means by demographically-matched students proved consistent and desirable.)

TABLE 30

THE ANALYSIS OF VARIANCE TABLE FOR STUDENT TALK IN THE CLASSROOM OF THE STUDENT TEACHER ON INTERACTION ANALYSIS, TRIAL 1

MEANS

G_1	G_2	G_3	G_4	G_5
68.00 ; 74.20	68.00 ; 67.20	71.40 ; 68.60	60.40 ; 46.60	121.00 ; 96.00
71.10	67.60	70.00	58.50	108.50

SOURCE		d/f	SS	MS	F
Between Cond		4	14893.72	3723.00	3.8
Ψ_1	1		204.00	204.00	<1
Ψ_2	1		2464.90	2464.90	2.+
Ψ_3	1		6864.40	6864.40	6.35
Ψ_4	1		5664.40	5664.00	5.14
Between R in C		5	1715.90		
R in C_1	1		96.10	96.10	<1
R in C_2	1		1.60	1.60	<1
R in C_3	1		19.60	19.60	<1
R in C_4	1		36.10	36.10	<1
R in C_5	1		1562.50	1562.50	1.+
Error		40	43240.39	1081.01	

This variable reflects the amount of student participation in the classroom in the form of their verbal interaction. Significant differences were in favor of classrooms conducted by student teachers who were matched demographically and by student teachers in Groups II and V. This latter comparison is the interaction effect. Again, no consistent trend was demonstrated within groups.

TABLE 31

THE ANALYSIS OF VARIANCE TABLE FOR INDIRECT STUDENT TEACHING BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 2

MEANS	G_1		G_2		G_3		G_4		G_5	
	79.40	80.40	95.20	87.40	90.80	93.20	95.60	42.60	83.40	71.20
	79.90		91.30		92.00		69.10		77.30	

SOURCE	d/f	SS	MS	F
Between Cond	4	3793.68	948.42	<1
Ψ_1	1	20.00	20.00	<1
Ψ_2	1	3404.03	3404.03	2.6
Ψ_3	1	198.00	198.00	<1
Ψ_4	1	140.60	140.60	<1
Between R in C	5	7563.60		
R in C_1	1	2.50	2.50	<1
R in C_2	1	152.10	152.10	<1
R in C_3	1	14.40	14.40	<1
R in C_4	1	7022.50	7022.50	5.45
R in C_5	1	372.10	372.10	<1
Error	40	51496.39	1287.41	

During trial 2 conducted at mid-quarter time, indirect student teacher behavior was demonstrated by the following: (1) mean scores demonstrated by Groups II and III were the highest; (2) within group means are mixed, but the only significant difference occurs within Group IV where more indirect behavior is exhibited by those students who had assessed their cooperating teacher below the median at the beginning of the quarter.

TABLE 32

THE ANALYSIS OF VARIANCE TABLE FOR DIRECT STUDENT TEACHER BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 2

MEANS	G_1		G_2		G_3		G_4		G_5	
	96.60	122.00	119.80	118.60	108.60	84.80	112.40	176.60	128.40	132.40
	109.30		119.20		96.70		144.50		130.40	

SOURCE		d/f	SS	MS	F
Between Cond		4	13664.28	3413.57	<1
Ψ_1	1		1436.50	1436.50	<1
Ψ_2	1		8702.50	8702.50	2.+
Ψ_3	1		3348.90	3348.90	<1
Ψ_4	1		176.40	176.40	<1
Between R in C		5	13376.70		
R in C_1	1		1612.90	1619.90	<1
R in C_2	1		3.60	3.60	<1
R in C_3	1		1406.10	1406.10	<1
R in C_4	1		10304.10	10304.10	3.04
R in C_5	1		40.00	40.00	<1
Error		40	137207.96	3430.20	

The greatest amount of direct behavior in trial 2 was exhibited by Groups IV and V and the least amount by Group III. There were no significant differences among the five groups, however. Within group comparisons showed mixed effects.

TABLE 33

THE ANALYSIS OF VARIANCE TABLE FOR STUDENT TALK IN THE CLASSROOM OF THE STUDENT TEACHER ON INTERACTION ANALYSIS, TRIAL 2

MEANS	G_1		G_2		G_3		G_4		G_5	
	111.60	85.40	73.40	70.40	94.60	103.40	84.60	59.00	72.20	73.60
	98.50		71.90		99.00		71.80		72.90	

SOURCE	d/f	SS	MS	F
Between Cond	4	8467.48	2116.00	1.46
Ψ_1	1	3073.28	3073.28	2.+
Ψ_2	1	1716.10	1716.10	1.+
Ψ_3	1	1988.10	1988.10	<1
Ψ_4	1	1690.00	1690.00	1.+
Between R in C	5	3575.50		
R in C_1	1	1716.10	1716.10	1.+
R in C_2	1	22.50	22.50	<1
R in C_3	1	193.60	193.60	<1
R in C_4	1	1638.40	1638.10	1.+
R in C_5	1	4.90	4.90	<1
Error	40	53906.38	1347.66	

Student talk at the second trial showed no significant differences. The higher mean scores appeared in Groups I and III.

TABLE 34

THE ANALYSIS OF VARIANCE TABLE FOR INDIRECT STUDENT TEACHER BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 3

MEANS	G_1	G_2	G_3	G_4	G_5
	68.00 | 86.20	87.20 | 72.20	80.80 | 96.60	93.60 | 35.80	78.20 | 70.00
	77.10	79.70	88.70	64.70	74.10

SOURCE		d/f	SS	MS	F
Between Cond		4	3037.92	759.48	<1
$\hat{\Psi}_1$	1		.70	.70	<1
$\hat{\Psi}_2$	1		2190.40	2190.40	2.+
$\hat{\Psi}_3$	1		846.40	846.40	<1
$\hat{\Psi}_4$	1		1.60	1.60	<1
Between R in C		5	10534.90		
R in C_1	1		828.10	828.10	<1
R in C_2	1		562.50	562.50	<1
R in C_3	1		624.10	624.10	<1
R in C_4	1		8352.10	8352.10	9.33
R in C_5	1		168.10	168.10	<1
Error		40	35779.18	894.48	

We would expect that the true test of teacher influence and of the matches made would occur during trial 3 which was conducted at the end of the quarter. The highest mean score was shown by Group III and the lowest score was shown by Group IV although there were no significant differences among the five groups on indirect influence. Again within Group IV there was a significant difference in favor of students who had assessed their cooperating teacher as below the median.

TABLE 35
THE ANALYSIS OF VARIANCE TABLE FOR DIRECT STUDENT TEACHER BEHAVIOR ON INTERACTION ANALYSIS, TRIAL 3

MEANS	G_1		G_2		G_3		G_4		G_5	
	139.80	132.80	107.40	109.60	99.00	102.20	115.60	182.20	102.20	130.60
	136.30		108.50		100.60		148.90		116.40	

SOURCE		d/f	SS	MS	F
Between Cond		4	15995.72	3998.00	1.48
Ψ_1	1		2506.32	2506.32	<1
Ψ_2	1		7896.10	7896.10	3.01
Ψ_3	1		4080.40	4080.40	1.+
Ψ_4	1		1512.90	1512.90	<1
Between R in C		5	13265.50		
R in C_1	1		222.50	222.50	<1
R in C_2	1		12.10	12.10	<1
R in C_3	1		25.60	25.60	<1
R in C_4	1		11088.90	11088.90	4.24
R in C_5	1		2016.40	2016.40	<1
Error		40	104554.77	2613.87	

The greatest amount of direct behavior shown on the third trial was by Group IV, followed by Group I. Group III demonstrated the least amount of direct behavior. Again, it was only within Group IV that the F value passed the critical point and the means revealed students who had assessed their cooperating teachers below the median at the ending of the quarter to show less direct behavior.

TABLE 36

THE ANALYSIS OF VARIANCE TABLE FOR STUDENT TALK IN THE CLASSROOM OF THE STUDENT TEACHER FOR INTERACTION ANALYSIS, TRIAL 3

MEANS	G_1	G_2	G_3	G_4	G_5
	74.60 | 72.60	87.00 | 104.60	106.40 | 86.40	77.40 | 48.60	101.80 | 84.20
	73.60	95.80	96.40	63.00	93.00

SOURCE	d/f	SS	MS	F
Between Cond	4	9225.12	2306.00	1.78
Ψ_1	1	1670.42	1670.42	<1
Ψ_2	1	3276.10	3276.10	2.+
Ψ_3	1	2340.90	2340.90	1.+
Ψ_4	1	2160.90	2160.90	1.+
Between R in C	5	4632.40		
R in C_1	1	10.00	10.00	<1
R in C_2	1	774.40	774.40	<1
R in C_3	1	1000.00	1000.00	<1
R in C_4	1	2073.60	2073.60	1.+
R in C_5	1	774.40	774.40	<1
Error	40	48479.99	1212.00	

There were no significant differences among the five groups or within the five groups in terms of the amount of student talk. The highest scores were shown by Groups II, III and V and in four of five cases there was more student talk in classes conducted by student teachers who had assessed their cooperating teachers as below the median at the beginning of the quarter.